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THE SIGHT-SAVING REVIEW

March, 1935

"Let There Be Sight"

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Contribution of Statistics to the Prevention of Blindness

Joint Session with the American Foundation for the Blind

Chairman, Ralph G. Hurlin, Ph.D., Director of the Department of Statistics, Russell Sage Foundation

CHAIRMAN HURLIN: I have no intention of making any speeches as chairman of this meeting. I should just like to call your attention to the fact that the program this morning is built around the work of the Committee on Statistics of the Blind.

About four or five years ago, while preparations were being made for the taking of the census of 1930 by the Federal Census Bureau, a conference was called in the offices of the American Foundation for the Blind. It was jointly sponsored by the Foundation and by the National Society for the Prevention of Blindness. That conference was primarily concerned with the question, "Should the Census Bureau continue to attempt to count the blind, providing the basic statistics as to the number of blind and some of their social characteristics?" The conference went on to discuss other aspects of statistics of the blind and of blindness and, as a result, a resolution was passed that a committee be established to work in this field. That Committee, sponsored by the two organizations, was appointed and has been working consistently during the past four or five years. The Committee has not made a great deal of noise but has accomplished, I believe, some very real results. The work is by no means concluded, but enough has been accomplished to talk about, and some members of the Committee are taking the opportunity this morning of selling their wares.

As committees go, I think this one would rate description as hard-working, and I believe that almost all the members of the Committee have kept closely in touch with the program and have been contributing consistently to its work. But, of the seven or eight members of the Committee, perhaps the two hardest workers

are the two members of the staffs of the respective organizations already mentioned. One of them, Miss Kerby, statistician of the National Society, is to present the first paper.

A Plan for Standardization of Statistics of the Blind

C. Edith Kerby

Even if trained statisticians were available to take over the entire burden of records and reports from workers for the blind and the prevention of blindness, it is doubtful if they should do so. Records are an important working tool for the physician, social worker and vocational adviser in their services to the blind. They are precision instruments as important in their way as the ophthalmoscope, vision test charts, etc.

Unfortunately it is only too true that the average person believes the doing of a job to be quite unrelated to the record of it. Only when the physician or case worker finds himself at a loss to carry on with a patient for whom his predecessor has left no records, or when some tragic mistake of omission or commission occurs, does the significance of the record as a working tool become apparent. Likewise, the conscientious worker frequently becomes so absorbed in the problems of individual cases that he finds little time to stand off and view the work as a whole, to consider new methods and objectives in the light of the past.

Side by side with this antipathy to anything which bears the label "statistics," there exists a demand for more definite information, more systematic methods of procedure. It was in answer to this demand that the Committee on Statistics of the Blind came into existence.

Over and over again workers for the blind and prevention workers asked such questions as "How many blind persons are there in the United States? What are the most important causes of blindness?" Research workers having access to libraries and files of reports searched for the answers to these questions and found, not a complete absence of information but, which is worse, contradictory information. Even the most complete and, presumably,

the most authentic source—the decennial reports compiled by the United States Bureau of the Census—gave unsatisfactory information on these important points. The Bureau's statisticians recognized that their enumeration of 1920 was incomplete. They estimated that the total number of cases reported was probably one-third less than the true figure, and had no way of knowing whether the characteristics of the group reporting would be true of the blind population as a whole. Certain state commissions for the blind estimated that the census total was probably only one-half the true figure for their states.

Again, concerning causes of blindness, the census could give only data based on the statements made by the blind persons themselves, instead of the reports of ophthalmological examinations. On the latter subject a few state commissions had compiled some ophthalmological findings, but no two had summarized their data in the same way, and, hence, totals or comparisons were not possible. On other subjects, also, information, for the most part, was found to be inconsistent, inadequate, or even completely lacking.

This was the situation in 1929. About that time it became evident that much of the difficulty was due to differences in definition and classification. The net result was that very few organizations were presenting the valuable information in their files in a form to make it available for guidance.

A special conference was called by the American Foundation for the Blind and the National Society for the Prevention of Blindness to discuss methods of improving statistics on blindness, as a result of which the Committee on Statistics of the Blind was created in 1930. It was charged with the responsibility of standardizing definitions, classifications, methods, etc. The Committee represents ophthalmologists, workers for the blind and for prevention of blindness, and social statisticians. It is sponsored and financed jointly by the American Foundation for the Blind and the National Society for the Prevention of Blindness.

The membership of the Committee on Statistics of the Blind is as follows:

Conrad Berens, M.D., member, ophthalmological section of the National Conference on Nomenclature of Disease

Lewis H. Carris, managing director, National Society for the Prevention of Blindness (*ex officio*)
Ralph G. Hurlin, Ph.D., director, Department of Statistics, Russell Sage Foundation (chairman)
Robert B. Irwin, executive director, American Foundation for the Blind (*ex officio*)
C. Edith Kerby, statistician, National Society for the Prevention of Blindness
Evelyn C. McKay, research agent, American Foundation for the Blind (secretary)
Bennet Mead, formerly of the United States Bureau of the Census
B. Franklin Royer, M.D., secretary, Committee on Conservation of Vision, State and Provincial Health Authorities of North America
Stetson K. Ryan, secretary, Connecticut Board of Education of the Blind

On medical matters the members have worked in close co-operation with ophthalmologists. At the last meeting of the American Medical Association, a special committee of ophthalmologists (of which Dr. Holloway is chairman) was designated to co-operate with the Committee on Statistics of the Blind. Likewise, workers for the blind have been freely consulted on problems, as individuals and as members of the three national organizations representing work for the blind (American Association of Instructors of the Blind, American Association of Workers for the Blind and the Conference of State Commissions and Associations for the Blind).

Before proceeding with a summary of the work of the Committee on Statistics of the Blind to date, it must be noted that, for the present at least, the Bureau of the Census has discontinued its special studies of facts relating to the blind. In 1930 the Bureau made only the simple counts of cases enumerated at the time of the regular decennial census. It is quite possible that we may never return to the wholesale and impersonal methods of the census; at least, not if we find that more reliable information is secured by placing the entire responsibility for providing necessary statistical data for guidance upon workers in our field.

The first task of the Committee was to decide upon a list of items on which information would be obtained. It was recognized

that the specialized functions of various agencies working with the blind sometimes make it necessary for these organizations to include certain data which would not have general interest or application. The Committee, therefore, recommended only the following minimum list of items to be included on case records of all organizations:

Name
Address
Sex
Date of birth
Country (or state) of birth
Marital status (single, married, divorced, widowed)
Race (White, Negro, Indian, Chinese, Japanese, Mexican)
Degree of visual handicap
Age at loss of sight
Cause of loss of sight (standard list)
Other members of family blind: if so, specify (blood relatives only)
Raised type used (specify)
Last occupation before blindness
Present occupation
Outdoor relief (financial) from public or private agency
If in institution, specify.

An additional list of items was suggested as valuable but not recommended for tabulation at the present time. These are:

Religion
Extent of education, before and after blindness (grade school, high school, college, vocational school, school for the blind, other)
Previous occupations (complete list of jobs held)
Earnings
Hours of work
Self-support (full, partial, etc.)
Handicap other than blindness

In considering the individual items on the list it was recognized that it would not be satisfactory merely to suggest the subject on which information was essential. Since uniformity and comparability of data were the aim, it was essential to decide upon the nature of detail that would be desirable, and to determine in advance the

classifications under which the data would be tabulated. These standard classification schemes became part of the Committee's recommendations.

A tentative plan for a statistical card, including all required items and accompanied by an instruction sheet indicating how entries are to be made, is among the schemes which have been worked out recently. The form is to be given a trial use by one of the state organizations which has volunteered to do this before the form is recommended for general use.

Selection of a scheme of classification of data presents little difficulty in the case of many of the required items, since accepted schemes already exist. However, classification groupings were entirely lacking for certain of the items, among which are the very important items on degree of blindness and causes of blindness. For these, the Committee on Statistics of the Blind undertook to evolve suitable classifications.

The development of the classification of causes of blindness illustrates the method of procedure which the Committee has followed in its work. Briefly, the steps were these:

1. Committee members set up a tentative scheme for classifying causes, in which etiology of the eye condition was stressed, and nature and location of the eye affection subordinated.
2. This plan was submitted for criticism to a group of ophthalmologists consisting of all those associated with the National Society for the Prevention of Blindness, either as directors or advisers, and also to the ophthalmological section of the Conference on Nomenclature of Disease, which was discovered to be working on a somewhat similar plan for all diseases.
3. The scheme was presented to the British Prevention of Blindness Committee for criticism and comparison with their own plan.
4. It was tried out on a group of 1,000 cases selected at random from the files of the New York State Division for the Blind, the New York City Lighthouse for the Blind, and the Connecticut Board of Education of the Blind.
5. By incorporating the constructive suggestions which had come out of the trial use and criticisms, a revised scheme was evolved, which calls for a complete cross-classification by etiology and by nature of eye affection.
6. This classification has been formally presented to the oph-

thalmological profession here and abroad by members of our Committee, Dr. Berens and Mr. Carris.

7. The scheme was submitted to the national organizations representing workers for the blind, by Miss McKay, and approved for trial use by them.
8. Through the good offices of the superintendents of state institutions and supervisors of public school classes for the blind, contacts were made by Miss McKay with the examining ophthalmologists. During 1933–34 these physicians supplied eye examination records of 2,702 pupils for classification by the Committee on Statistics of the Blind.
9. Arrangements were made to carry on similar studies for these schools routinely, each year, and to add to the group of schools covered, so that eventually information on all children enrolled in schools for the blind will be complete and available currently.

No compilations of adult cases have been made as yet by the Committee but it is a source of great satisfaction to Committee members to learn that a few organizations, serving groups of adult blind, have undertaken to use the Committee's classifications in making their own studies. I have in mind particularly the plans for the study of pension applications by the Pennsylvania Council for the Blind and the co-operative study of case records being made in New Jersey by the Commission for the Blind and the statistical division of the State Department of Institutions and Agencies. There may be others of which the Committee members have not heard.

The cause classification is subject to some further revision with use but enough has already been done to indicate that it is sound and useful. The main groupings used in the classification will become apparent in Dr. Holloway's discussion of the statistics, compiled by the Committee, on causes of blindness among children.

While the classification of causes of blindness and its application in statistical studies have consumed a major portion of the Committee's time to date, the solution of other problems has also received attention.

Among the problems of paramount importance is that of finding a satisfactory definition of blindness. On this one point alone there has been, perhaps, more disagreement among agencies for the blind than on any other subject. The Committee was aware

that other groups had worked on this problem before it, and that its solution was complicated by the fact that many of the definitions in use had been written into state laws. Having determined that absolute agreement was practically unattainable and possibly undesirable, the Committee recommended that "the blind" be divided into several groups, graded by the amount of visual perception remaining. It was felt that, if summaries of case data were presented by these groupings, we could not only tell at a glance the groups covered by each agency but we could also make totals and comparisons which are statistically sound. The vision groupings selected were intended to indicate differences which have a real significance in determining the tasks which an individual can perform. The classification has still to be scientifically tested. The five groups as they appear on the tentative schedule are:

Group	Description of Group	Snellen Measurements—(feet)
1	Totally blind or having "light perception" only	0 up to but not including 2/200
2	Having "motion perception" and "form perception"	2/200 up to but not including 5/200
3	Having "traveling sight"	5/200 up to but not including 10/200
4	Able to read large headlines	10/200 up to but not including 20/200
5	"Borderline" cases	20/200 or more but not sufficient for use in an occupation or activity for which eyesight is essential

One advantage of this type of classification is that it can be extended to include one or more groupings covering those with seriously defective vision who are not blind, but about whom we may wish to tabulate the same type of statistical items. For example, it would be highly desirable to make a study of causes of eye difficulty in defective vision cases, using the same cause classification in order that the two groups might be compared.

Another problem on which the Committee has worked is the development of a simple form to be used by the examining ophthalmologist in reporting his medical findings and recommendations to the agency for the blind. It became evident that such a

standard form would be necessary when it was discovered, first, that many agencies were relying upon the physicians to supply whatever information as to diagnosis they wished to give, and, second, that some organizations had special report forms which did not call for the information which the Committee on Statistics of the Blind was planning to tabulate. The form is not designed to serve the purpose of the case record used by the physician in his office or clinic, but is intended to give the agency a minimum of medical information which it requires for intelligent service to the individual and for statistical purposes. The forms may be purchased from the American Foundation for the Blind or, where an organization requires still further diagnostic detail, the items of the Committee on Statistics of the Blind form can be incorporated in the more elaborate form of that agency.

One of the earliest activities undertaken by the Committee on Statistics of the Blind was concerned with the problem of determining the number of blind persons in any area. As mentioned above, it was well known that the counts of the census were incomplete. The registers of the blind kept by state commissions for the blind seemed more complete but, since they tended to include only individuals eligible for the particular services offered by the commissions, it was felt that they could not be assumed to be 100 per cent complete, unless or until they had been checked. Hence, an intensive survey seemed desirable.

In his capacity as executive of a state commission, one of our members, Mr. Ryan, volunteered to make a special census in two areas in his state, using several methods of case finding suggested by committee members. The resulting register was checked against the United States Bureau of Census' returns for the same areas, in an effort to discover the types of cases formerly missed and the most effective methods of case finding. In part of his North Carolina surveys, Mr. Hayes, of the American Foundation for the Blind, used a house-to-house-visit method suggested by the Committee on Statistics of the Blind. In the recent Brooklyn survey, which was made under the direction of the New York State Division for the Blind, somewhat different methods were employed. From the reports of these surveys, sufficient information is available to indicate that periodic case-finding surveys are

needed to keep registers up to date. This is essential if statistics are to be complete even for limited areas.

From this presentation of the major activities of the Committee on Statistics of the Blind, it is seen that the chief result of the work to date has been to produce a set of standards for the collection and classification of information concerning the blind. As will be apparent from the reports of our other speakers, a beginning has been made in the next steps, which are (1) to gather data on essential medical and social facts for statistical summary and analysis, and (2) to make such application of the data as the findings indicate.

We cannot emphasize too strongly the fact that in the future, as in the past, the success of this undertaking will depend upon the active co-operation of all workers concerned in the two allied fields of prevention of blindness and work for the blind. For, as Dr. Jackson has so aptly stated it, "Advances in knowledge and achievement are brought about by observing, correlating and using facts. We must have more accurate, explicit and reliable statistics of blindness as it now exists in our country."

There can be little doubt that if the statistical program is successfully carried out we shall have the necessary guides for bringing a new and square deal to an important group of the handicapped—those with defective vision.

CHAIRMAN HURLIN: I think you will see from Miss Kerby's paper that the Committee has been attempting to cover numerous aspects of the problem of the production of tools and the sharpening of the tools we already have for dealing with facts concerning the blind and the prevention of blindness.

The next speaker, Dr. Holloway, of the Overbrook School, is not a member of the Committee but has been very instrumental in helping the Committee on one particular phase of its work, and has made use of some of the data that have been produced by the Committee, particularly by Miss Kerby and Miss McKay, on causes of blindness. Dr. Holloway, I think, made his school records available to the Committee, his being the first school in which the new scheme for classification of the blind by the standard list of causes was tried.

The New Statistics on Causes of Blindness Among Children

Thomas B. Holloway, M.D.

It seems proper at the onset of my remarks to call attention to the fact that if we eliminate the congenital conditions, the various refractive errors, direct contamination of the ocular structures, trauma, including radiant energy, and the various types of tumors, all of the remaining diseases of the eyes are dependent upon pathologic changes affecting adjacent or distant parts or organs. It might be added also that a definite percentage of ocular tumors are metastatic. The fact that so many of the pathologic processes encountered in ophthalmology are secondary explains why it is frequently essential to refer our patients to those practicing other branches of medicine. In other words, we are not content to treat what may be but a local manifestation of a remote pathologic focus or of a systemic disease, but we attempt to eliminate the exciting cause. Could this be definitely and positively determined in each instance, the accumulated statistics available at every ophthalmic center would be invaluable in the course of a few years in pointing out the incidence of ocular affection resulting from the various local or systemic diseases. Needless to say, there are many deterring factors at the present time that prevent us from achieving the ideal objective in many instances, but much of the advancement in modern medicine has been brought about by such comprehensive and correlating studies.

The Committee on Statistics for the Blind, in its approach to a classification for the causes of blindness, has included, very properly and wisely, in this study an etiological as well as a topographical classification, hoping that the ultimate results may indicate the direction in which its efforts may be best expended to subserve the primary objective, namely, the prevention of blindness.

But the inclusion of an etiological classification serves still another purpose in that it places before the numerous non-medical workers allied with our various societies and organizations a list of possible affections that may produce serious ocular diseases, and they in turn pass on such information to the laity. In other words, it will serve as a method of education which, in my opinion, is the

most important factor of all in the matter of prevention of disease. But this education must be of the type that can be understood and it must be persistent, for there is a rapid turnover in the material presented for education. On the other hand, I believe the etiological data will be much more difficult to elicit and likewise will be less reliable than the data pertaining to the topographical classification. What is more, I believe it will be less reliable than similar data obtained at most of the ophthalmic centers where a permanent group of physicians would be acting as the correlating agents. But none of these statements should detract from the classification attempted and the splendid efforts so far exerted in its accomplishment; whatever we obtain will be better than what we have at our disposal at the present time.

Naturally, in attempting such a classification, attention would be directed first towards the schools for the blind. It must be remembered that the incidence for the various causes of blindness will be found to vary somewhat according to the locations of these schools, but I do not believe as greatly as this would pertain to the causes of blindness acquired in adult life, where, for example, trauma should show a wide variation in the industrial sections of the country as compared with the agricultural sections. Several factors pertinent to the schools will have a direct bearing on the importance and accuracy of these statistics. First, the character or amount of data on the application blanks necessarily will have a direct bearing on the etiology. At Overbrook we have made a complete revision of our application blank which will include one part pertinent to the education of the child, a second part which pertains to general medical inquiries, and a third part applicable to the eye alone. Further, it will be required that each applicant shall be examined before his admission by a physician who is an eye specialist. This may serve as an incentive to certain other schools to make similar revisions when the opportunity affords. As for our revised application blanks, the information requested or demanded will groove satisfactorily with the requirements of the Committee on Statistics of the Blind, as well as those of the administrators of the pension fund for the blind, which fund became operative in Pennsylvania during the present year. It is probable that with the revisions already made, certain letters of inquiry to

physicians or hospitals may be necessary to obtain the required data. Even then it is possible that in certain instances no reliable data will be obtained and the ultimate decision depends upon the judgment of the attending ophthalmologist. The ophthalmic background of the physician responsible for the examinations at the schools will have a bearing on the statistics under discussion. Moreover, it must be realized that in all schools for the blind there is a definite percentage of students whose intelligence quotients are below the average (at Overbrook the dull, backward and feeble-minded groups total 43.7 per cent, and 8.7 per cent of the total number in the school are probably feeble-minded). Naturally such children are difficult for subjective testing and for some types of objective tests. As a rule the external examinations can be made fairly satisfactorily, but even these examinations are impossible or quite unsatisfactory, in certain instances, for some months at a time. The only way some of these children could be examined satisfactorily would be to etherize them and that procedure we never resort to. Finally, when the interior of the eye is examined, one is attempting to look through a constantly moving pupil at a similarly moving object, for practically all of these eyes with great impairment of vision, or in eyes totally blind, have the so-called searching movements associated with nystagmus. As a consequence, it frequently requires painstaking and persistent efforts to get even a passing view of certain structures within the eye and there is no opportunity for protracted study of the details of the eye-ground, such as is the case in normal eyes.

Naturally, clinical and ophthalmological experience will determine the final classification of certain cases, especially where the etiological data may be deficient or even wanting. It must be remembered that the physician is confined to the data presented and seldom has an opportunity to interview the parents. Even in certain instances where the etiological factors are available, the clinical conditions found might make the statements as to the assigned cause seem highly improbable. Finally, in a case with an accurately assigned cause, two thoroughly competent physicians might differ as to the condition really responsible for the blindness, for it must be remembered that in many of these eyes several

serious conditions may be present, and any one of them capable of producing blindness or much impaired vision.

Before taking up the discussion of causes of blindness I want to revert to the year 1908 when I first went on duty at the Overbrook School. At that time I found a considerable number of children in the School who had, in my opinion, too much vision for a school for the blind. After consultation with Mr. Burritt, we decided that some visual dividing line was necessary for a proper working guide and we set up a standard of 6/60, or 20/200. As the opportunity presented, those children having better vision than this standard were gradually eliminated. We felt that from a psychological, educational and economic standpoint such a step was justified. As far as I know, this standard has been rather generally adopted, not because it was used by us, but probably because others interested in the same work independently arrived at the same conclusion. The first social service department in Philadelphia was organized in 1907 but, needless to say, for many years after that many of the untrained workers with various charitable organizations seemed to regard the school as a home for blind children, irrespective of any other medical condition that might be associated with the ocular affliction. I am happy to say that the adoption of a definite visual standard and the more widespread recognition of the value of the social service worker have made some of the problems of admission less troublesome.

The amazing thing to me is that the group for which it was not possible to specify the etiology constituted only 9 per cent of the total. It may be difficult to lower these figures in the near future, but doubtless much can be done towards making the etiological classification more accurate.

In considering an etiological classification it is well to remember that the chief causes producing blindness in those of school age are the congenital defects, ophthalmia neonatorum, hereditary syphilis, the exanthematous diseases, trauma (as the result of explosives or play or sport), certain intracranial affections (as meningitis, hydrocephalus and brain tumors), tuberculosis and trachoma.

In considering some of the ocular conditions encountered in schools for the blind let us first refer to the largest group, namely, the congenital and hereditary conditions; the incidence for these is

51.1 per cent. It must be realized that there is a decided tendency for congenital defects in the eye to be multiple. For example, a child may have a microphthalmos, but associated with it there may be a coloboma of the iris and choroid and a defect in the crystalline lens. How is this particular case to be classified topographically? Among the congenital conditions, buphthalmos, hydrophthalmos, or ox eye, as it is sometimes called, is conspicuous. Essentially it is an infantile form of glaucoma, and operative procedures, in my experience, are most unsatisfactory. Aniridia, or that condition of the eye where the iris or colored part of the eye is partially or completely absent, as far as one can see by external examination, is notoriously hereditary and may lead to secondary glaucoma. Albinism, while not infrequently seen, in my experience is not as often associated with the extreme degrees of impairment of vision or actual blindness. In my experience, also, high myopia as seen in a school for the blind is more frequently observed in association with other contributing conditions.

Unfortunately it is difficult to get accurate statistics concerning cataract. Many of these children have been operated on prior to their admission. Was the cataract one of the true congenital types or was it secondary to a keratitis or a disease of the uveal tract, that is, of the iris, ciliary body and choroid? Frequently there is no definite way of determining this. As to congenital cataract, I believe it should be generally known that in most of these cases, despite an absolutely perfect operative result, the vision still remains defective and, in a definite number of children, the best that can be obtained is not sufficient to exclude them from a school for the blind. In other words, in addition to the cataract, the eye may be amblyopic, often without demonstrable changes in the eyeground.

Rosters for schools for the blind, at least in the east, are probably not exempt from the same changes that are occurring in the rosters of our eastern colleges, as far as the increase in the number of Slavic and Italian names is concerned—that is to say, there are fewer British, French, and German names. During the past five to ten years I have been impressed with this change in our roster at Overbrook and have commented upon it on several

TABLE I.—CAUSES OF BLINDNESS—CLASSIFICATION BY ETIOLOGICAL CAUSE*

Cause of Blindness	Number	Per Cent
INFECTIOUS DISEASES	772	28.6
Diphtheria	3	.1
Gonorrhea (excluding O.N.)	6	.2
Measles	24	.9
Meningitis	55	2.0
Ophthalmia neonatorum		
Gonorrheal	82	3.0
Other types, specified	..	..
O. N., not specified	208	7.7
Scarlet fever	6	.2
Septicemia	16	.6
Smallpox	3	.1
Syphilis		
Prenatal	126	4.7
Acquired	..	..
Origin not specified	15	.6
Trachoma	13	.5
Tuberculosis	13	.5
Typhoid fever	1	.1
Other infections, specified	30	1.1
Infections, not specified	171	6.3
TRAUMATIC AND CHEMICAL INJURIES	211	7.8
Non-industrial injuries	..	..
War	..	..
Explosives	..	..
Fireworks	4	.2
Firearms	19	.7
Other explosives, specified	28	1.0
Explosives, not specified	..	..
Play or sport	68	2.5
Household activities	4	.2
Street and traffic accidents	10	.3
Injuries incidental to surgery	1	.05
Birth injuries	4	.2
Other non-industrial injuries, specified	30	1.1
Non-industrial injuries, not specified	22	.8
Industrial injuries and diseases		
Trauma (including burns) specified	1	.05
Industrial diseases (including poison)	..	..
Industrial injury, not specified	..	..
Injuries, not specified	20	.7
TOXIC POISONING (excluding industrial)	2	.1
Tobacco	..	..
Alcohol (ethyl, grain)	..	..
Alcohol (methyl, wood, denatured)	1	.05
Other toxic poisons, not specified	1	.05
NEOPLASMS	58	2.2
NON-INFECTIOUS SYSTEMIC DISEASES	33	1.2
Anemia and other blood diseases	..	..
Diabetes	..	..
Nephritis and other kidney diseases	1	.1
Vascular diseases	..	..
Non-infectious diseases, central nervous system	14	.5
Diseases of pregnancy and childbirth	..	..
Other systemic diseases, specified	13	.4
Systemic diseases, not specified	5	.2
CONGENITAL AND HEREDITARY	1,382	51.1
Prenatal	1,067	39.5
Hereditary and familial	315	11.6
ETIOLOGY NOT SPECIFIED	244	9.0
Unknown to science	4	.1
Undetermined by physician	186	6.9
Not specified	54	2.0
TOTAL—ALL CAUSES	2,702	100.0

* Based on 20 schools and classes for the blind, 1933–34; compiled by Committee on Statistics of the Blind

occasions. Needless to say, these changes would probably apply more particularly to schools in the east, or probably to the New England, Middle Atlantic and North Central States. Further, there has been a vague suggestion, from what brief contacts I have had with these children, that as a group their mentality is inferior to the other children considered as a group. In other words, I believe the intelligence quotients for these children would show a higher percentage in the groups rated below "average," that is, the backward, dull and feeble-minded, taken as a group, for my observations have been too conjectural to warrant an attempt to subdivide the below "average" into grades. I believe this question is important enough from an economic and immigration standpoint to warrant an investigation. Likewise it has seemed to me that there has been an increase in the number of our congenital and hereditary conditions, and I am including here the cases of retinal degeneration; this is but an impression, for up to the present, no statistical study has been made, but one is now in preparation.

Before leaving those ocular conditions classified topographically under "eyeball," reference might be made to the item "disorganized eyeball." Needless to say, these eyes represent the terminal stages of various destructive inflammations of the eyes, where enucleation has not been regarded as necessary or consent for operation has been refused. In the majority of cases, such an eye condition is not due to a congenital factor, but where this factor is present it is probable that buphthalmus and aniridia would be the leading contributors, in each case dependent upon the glaucomatous process.

As to "panophthalmitis and endophthalmitis," these are dependent upon infections from without, ectogenous infections, or infections from within, that is, from certain inflammatory foci elsewhere in the body, endogenous infections.

The corneal group is an interesting and important one constituting 14.4 per cent of the cases. It will be noted that no cases involving the conjunctiva have been included in the topographical classification, doubtless because the severe infections of this membrane produce blindness as the result of involvement of the cornea or the uveal tract. One of the most interesting items in this group

Based on 20 schools and classes for the blind, 1933–34; compiled by Committee on Statistics of the Blind

TABLE II.—CAUSES OF BLINDNESS—CLASSIFICATION BY TOPOGRAPHICAL CAUSE*

Cause of Blindness	Number	Per Cent
EYEBALL	838	31.0
Hypertension (glaucoma)	4	.2
Refractive errors		
Myopia	93	3.4
Other refractive errors, specified	51	1.9
Refractive errors, not specified	1	.1
Motor anomalies		
Amblyopia ex anopsia (squint)	9	.3
Other motor anomalies, specified	..	..
Motor anomalies, not specified	..	..
Developmental anomalies and degenerative changes		
Albinism	63	2.3
Anophthalmos (excl. surgical)	9	.3
Megalophthalmos	175	6.5
Microphthalmos	77	2.8
Aniridia	25	.9
Disorganized eyeball	234	8.7
Other devel. and degen. changes, specified	73	2.7
Devel. and degen. changes, not specified	3	.1
Panophthalmitis and endophthalmitis	21	.8
Other affections eyeball, specified	..	..
Affections eyeball, not specified	..	..
CONJUNCTIVA	0	0.0
Conjunctivitis	..	..
Other affections conjunctiva, specified	..	..
Affections conjunctiva, not specified	..	..
CORNEA	389	14.4
Interstitial keratitis	65	2.4
Kerato-conjunctivitis, phlyctenular	12	.4
Keratitis, not specified	14	.5
Ulcerative keratitis	277	10.3
Other affections cornea, specified	21	.8
Affections cornea, not specified	..	..
IRIS AND CILIARY BODY	60	2.2
Iridocyclitis	53	1.9
Iritis	7	.3
Other affections iris and ciliary, specified	..	..
Affections iris and ciliary, not specified	..	..
CRYSTALLINE LENS	461	17.1
Lens opacity (cataract)	423	15.7
Dislocated lens	37	1.4
Other affections of lens, specified	..	..
Affections of lens, not specified	..	..
CHOROID AND RETINA	390	14.4
Choroiditis	50	1.8
Uveitis	90	3.3
Retinitis	10	.4
Disseminated chorioretinitis	138	5.1
Detached retina	9	.3
Retinal hemorrhage	1	.1
Retinal degeneration	81	3.0
Obstruction central artery or vein	..	..
Other affections choroid and retina, specified	11	.4
Affections choroid and retina, not specified	..	..
OPTIC NERVE	453	16.7
Optic atrophy	381	14.0
Optic neuritis	25	.9
Neuroretinitis	41	1.5
Other affections optic nerve, specified	4	.2
Affections optic nerve, not specified	2	.1
VITREOUS HUMOR	6	.3
Intraocular hemorrhage	2	.1
Opacities	3	.1
Other affections vitreous humor, specified	1	.1
MISCELLANEOUS AND ILL-DEFINED	105	3.9
Amblyopia, undefined	41	1.5
Other ill-defined lesions, specified	..	..
Lesions, not specified	64	2.4
TOTAL—ALL CAUSES	2,702	100.0

* Based on 20 schools and classes for the blind, 1933–34; compiled by Committee on Statistics of the Blind.

is phlyctenular kerato-conjunctivitis, which has the lowest incidence. At the present time this is not represented at Overbrook, and, I may add, the severer types of this affection are seldom seen by ophthalmologists in our eye clinics. This statement contrasts with the fact that the disease was more frequently encountered thirty years ago. The improvement has doubtless resulted from the efforts of those interested in the general health and welfare of children and from school medical inspection, when those affected are seen and reported while the disease is in the early stages.

Naturally the "ulcerative keratitis and sequelae" item would be the largest, for here would be included those cases resulting from ophthalmia neonatorum, those due to the other infectious diseases, and likewise a certain number of the traumatic cases.

When we consider ophthalmia neonatorum, it should be remembered that the yearly incidence for this disease at a school for the blind is a decidedly variable one. I have seen it range from 4.8 to 32.8 per cent at Overbrook. As a result, we get a better picture of the incidence when this is determined for periods of about five years. In the twenty-six years I have been associated at Overbrook, I have seen it drop from 32.5 per cent to approximately 15 per cent. It will be recalled that the incidence for pupils entering schools for the blind throughout the United States in 1932–33 was 6.7 per cent. These figures and results are astonishing when we consider the character of the disease, and illustrate what can be done when a well-directed and executed campaign of education is backed by adequate legislation.

If such results are to remain permanent or are to be improved, this campaign must continue, and the fact that this affection is not necessarily due to a venereal disease further emphasized. It is difficult to get definite figures as to the incidence for the gonorrheal type, but I believe the 28 per cent shown in the statistics under discussion is lower than is generally believed. Further, the figures presented to the Committee for statistical purposes are far too variable to be accepted as showing a fair degree of accuracy. We do know that many pus-producing organisms are capable of producing the disease—the same organisms that produce conjunctivitis in adult life—and, in addition to this, certain of these cases, as they occur in general, are doubtless of the inclusion blennorrhoea type.

Thygeson's recent excellent work concerning this last affection should be most helpful.

When we refer to interstitial keratitis, with an incidence of 2.4 per cent, we are approaching another serious condition which, while not as frequently encountered in schools for the blind as ophthalmia neonatorum, is shrouded in even greater difficulties, since it pertains to the domestic situation. Accepting as I do that the vast majority of these cases are caused by prenatal syphilis, it must be remembered that other stigmata of this disease are frequently associated with the ocular affection. In the surviving infants and children with prenatal syphilis, Stokes concedes an incidence for interstitial keratitis of 52 per cent. Further, it must be remembered that no portion of the eye is exempt from the ravages of syphilis and that involvement of the cornea is frequently, and in the severer type usually, accompanied by other ocular manifestations. As far as the cornea is concerned I believe the statistics presented are quite accurate, but whether the incidence for syphilis, 5.3 per cent, is quite as accurate is questionable. I mention this chiefly because I am in ignorance as to whether a routine Wassermann test is made at all of the schools included in this survey. At Overbrook we began these tests in suspicious cases in 1921, but since 1924 this test has been used routinely. Needless to say, I believe it should be part of the routine at every school. But even this test is not infallible in prenatal syphilis for, in the aggregate, only about 66 per cent give a positive reaction; the test becomes less efficient as the child increases in age. The difference in the statistical figures for syphilis, 5.3 per cent, and interstitial keratitis, 2.4 per cent, is made up chiefly of those syphilitic manifestations included under the uveal tract and optic nerve.

As is well known, the National Society for the Prevention of Blindness and the American Social Hygiene Association recently initiated a campaign against prenatal syphilis, and, in doing so, I believe they directed their energies along deserving and much needed concerted efforts. When fully established, this crusade should receive the unstinted support of the medical profession, all allied organizations, and the various agencies for public education. I dare say that to most people the reference to syphilis would be

far less reprehensible than much of the text presented by some of our newspapers and magazines.

A word might be said about trachoma; in the present statistics the incidence is low, 0.5 per cent. Twenty-five to thirty years ago, approximately a million aliens were admitted to this country each year and an annual average of about one thousand cases of trachoma were detected at the port of New York. Our restricted immigration and the efficient foreign service of the U. S. Public Health Service have changed much of this, as can be appreciated by noting that for the year ending June 30, 1933, the number of aliens admitted was 23,068, while at the port of New York but thirteen cases of trachoma were certified. So this question tends to resolve itself into caring for the scattered cases and saturated areas already existing in this country. In other words, with trachoma, as with certain of our other political, social and economic ills, we have enough work to do in setting our own house in order without paying much attention to the foreign conditions.

The uveal tract, to which I have alluded above, is the vascular coat or tract of the eye, made up of the iris, ciliary body and choroid. Therefore, it would include those diseases listed under iritis and iridocyclitis (2.2 per cent), choroiditis (1.8 per cent), uveitis (3.3 per cent) and, I believe, the majority of those cases listed under disseminated chorioretinitis (5.1 per cent). If the last named affection should be included, it would give us a total of 12.4 per cent for the whole tract. This is the tract usually primarily involved as the result of remote pathological processes, in systemic affections such as syphilis and tuberculosis, and, secondarily, after severe corneal ulcerations and operative procedures. Frequently, as seen in schools for the blind, inflammations of this tract, for one cause or another, prevent any view of the posterior part of the eye or eye-ground, when using the ophthalmoscope.

I have just referred to tuberculosis and note the statistical incidence of 0.5 per cent. This seems low, even for the United States, where the incidence of this disease is generally regarded as lower than in Europe. However, it must be said that frequently exhaustive examinations are necessary in certain instances, before a diagnosis of ocular tuberculosis can be made, and further, the eyes of many of these students do not permit of a fundus examination

or may be in the stage referred to above as presenting a disorganized eyeball.

In considering the retina, we include retinitis (0.4 per cent), detachment of the retina (0.3 per cent), and the cases included under retinal degeneration, (3.0 per cent), a total of 3.7 per cent for the inner coat, or what might be called the photographic plate of the eye. A few of the cases of chorioretinitis may possibly belong in this group, but I have included them in the uveal tract group. Doubtless some of the neuroretinitis cases might properly be placed here. The retina, like the other coats of the eye, may be influenced by congenital and hereditary affections. The outstanding item in this group is retinal degeneration. The most frequent type is retinitis pigmentosa, including the less frequently observed retinitis pigmentosa sine pigmento. In addition to these, there are certain allied conditions that could be grouped here. While optic atrophy is frequently associated with retinitis pigmentosa, it is not always present at the time the case is examined.

Retinal detachment is most apt to occur in the higher myopes; trauma, trivial or severe, is usually the exciting cause. Not infrequently in the late stages of buphthalmos, detachment of the retina occurs. Even in the so-called spontaneous cases of detachment, trauma, in the most radical sense, is the initiating factor.

When we consider the optic nerve, the percentage conceded this group, 16.7 per cent, is about equal to that for the crystalline lens, 17.1 per cent. We also find that optic atrophy, with an incidence of 14 per cent, is the affection that ranks next to cataract in the order of frequency. This condition is produced by certain affections of the brain and spinal cord; some are of prenatal syphilitic origin, like juvenile tabes, in which affection the optic nerve is more frequently involved than in the adult type of locomotor ataxia. Included among these various intracranial affections are the various types of brain or intracranial tumors. I well recall the boy who was probably the first student admitted to Overbrook who recovered from a lesion of this type, for I had examined him before and after his operation. Prior to that time, the postpapillitic type of atrophy due to tumor was seldom seen in the schools, for all of these children died. Today, thanks to the advances that have been made in neurosurgery, many of these lives are saved,

and if the children are seen before destructive pressure is made on the visual nerve fibres, many of them recover with an amount of vision that would exclude them from a school for the blind.

Aside from other affections that may cause optic atrophy, it is frequently the result of certain types of retinochoroidal disease, and these cases might be differently classified by ophthalmologists. Here some reference might be made to hereditary optic atrophy, sometimes designated Leber's disease. It is a definitely sex-limited disease, and is most frequently transmitted by unaffected females. I agree with Julia Bell that if much progress is to be made against this affection, the sisters of affected males must refrain from marriage.

Concerning the amount of vision found among these students, it is interesting to note that in seven schools the proportion having visual acuity better than 6/60 (20/200) varied between 15.2 and 36.6 per cent of the student body. Most of this group would profit from sight-saving class training. This comment is not made in criticism, for it is probable that many of these students come from sections of the country where such classes do not exist or where it might not be possible to organize them. Concerning the children having vision even better than the standard set for sight-saving class pupils, the obvious inference is that their acceptance as candidates for tactile education seems an injustice to them.

In conclusion, I desire to congratulate the Committee on Statistics of the Blind on the results of their earnest efforts and I sincerely hope that, in the future, better and more available data will be placed at their disposal. When a better job is done I believe this same Committee will do it.

CHAIRMAN HURLIN: I am sure the Committee is grateful to Dr. Holloway for his remarks. The next speaker is known to you all, I am sure: Mr. Irwin, executive director, American Foundation for the Blind.

How Statistics Influence Work for the Blind

Robert B. Irwin

I shall confine my few remarks today to mentioning some of the ways in which the statistics and records developed by the Committee on Statistics of the Blind have affected work for the blind. The records and statistics of the past have been so irregular in nature, that, in a good many cases, they hardly deserved recognition as material on which to build up statistical conclusions.

I am going to speak principally today upon the effect and value of the Committee's statistical work in the schools for the blind, because the schools have been the first agencies for the blind to make use of the blanks and classifications drawn up by the Committee. About half of the blind pupils now under instruction in this country are in schools which are using these blanks and statistical classifications. The rapidity with which the schools have come forward and adapted their examinations and their methods of keeping records so as to fall into a general scheme of statistics-gathering has been very gratifying.

Someone has said, I believe, that statistics are a collection of facts which tell you something you already know. That is not quite true, but there is an element of truth in it so far as a good many of us are concerned. They tell you things which you have had a notion were true, but which you have not been in a position to prove. Statistics, collected as the Committee has outlined, are already giving definite proof which confirms certain ideas that superintendents of schools for the blind have already had and have perhaps given them some additional ideas which they have not had before.

These statistics help the superintendent by giving him a picture of the situation. They help him to compare his school with other schools. They will help him to compare his school today with his school five years from now. Perhaps most valuable of all, from the standpoint of the administrator, they show him where administrative action should be taken and taken as promptly as possible.

The blanks require that an eye examination be made by an eye physician. An outsider unfamiliar with the situation of work for

the blind in this country might be a little surprised to find that schools for the blind have any pupils in them who have not been examined by an eye physician. The number of children who have not had an eye examination by an eye physician is, fortunately, becoming smaller, but a good many of our schools for the blind are receiving children, and are compelled by law to receive them, upon the recommendation of a local doctor who may or may not be an eye physician. The pupil is referred to the school by a local physician in his home town, in some outlying county, perhaps, and the school may or may not have this child examined by an eye physician. The blanks recommended by the Committee, however, require that an eye physician go over the entire student body and make a detailed report on the eye condition of each child, with prognosis and recommendations. In some cases, this has brought out some striking facts, of which the superintendents were formerly only partially aware, and which, when brought out in this way, have really made them see that they must take some action. For instance, in one school, they found forty children whose eye conditions, according to the ophthalmologist's report, could be improved by some kind of treatment. You may have a feeling that a few of the children in your school might have their eye conditions improved, and still you may not do much about it, but when someone points out to you that there are forty children whose sight can be improved, you will not delay longer in doing something about it.

In some cases, pupils with defective vision are sent to schools for the blind upon the order of a judge in some outlying county, not so much because their sight is so defective that they cannot be instructed in the public schools, but because their families have been broken up or some other tragic situation has occurred. Since the local doctor has certified that they are blind, and the social situation is complicated, the superintendent accepts the pupils without question, though he realizes that they have considerable vision. This superintendent may be succeeded by another. He finds children that have been there for a number of years who have considerable vision, but he probably does nothing very much about it because they came there before his time, and he does not want to take drastic action.

As a result of the adoption of these blanks during the past year, in one state, twenty children from the school for the blind have been sent to the public schools because they have too much vision to be properly classified as blind children even by a liberal interpretation of the term "blind."

I want to mention some other by-products of the use of the Physician's Report Form for Eye Examinations:

In one school, seventeen children whose sight was susceptible of improvement were given the necessary treatment or operation, with gratifying results.

In another school, where there had been no eye examinations at all, they have arranged to have all the children examined and hope to include in their next budget the necessary appropriation to put this service on a permanent basis.

The work of the Committee has stimulated a general interest in the collection of standard statistics and also in getting treatment for the children in our schools for the blind, and we are sure that it will eventually result in better teaching for these children because, after all, the amount of vision that a child has should be taken into account in planning his method of instruction.

The application of this system of classification of cases and arranging for eye examinations is not so easy in the case of the adult blind who are served by the state commissions for the blind. Adult clients are scattered over the state, and not only are they not always willing to have their eyes examined, but eye examinations are not easy to arrange. Several of the state departments, however, are taking an interest in the work of this committee on statistics, and some of them have already adopted the standard blanks. We feel certain that in the not distant future the preparation of quite satisfactory comparative statistics will be possible by reason of the fact that information is being gathered in the same way in several different states.

In states where there is a blind relief or blind pension which has some central supervision of its administration, it is not going to be difficult to collect the data called for on these blanks because, when people are applying for special relief that is given to blind people, they have to prove that they are blind. That involves an eye

examination and it is not hard to require that the eye examination be made by a qualified eye physician.

The American people are not statistically-minded. A few of us are interested in collecting statistics and appreciative of the results, but the average American is not much impressed by an array of statistics. However, the American people are interested in individuals, and they will seldom let individuals suffer if the matter is really brought to their attention. The collection of statistics by the use of these blanks and by the carrying out of examinations by eye specialists, we feel confident, is going to result in the restoration of vision to a great many people who are now on the list of the blind. The collection of figures showing the number of people who require eye care at public expense, and the pointing out of individuals who require eye treatment, are going to make it much easier for those in charge of our state departments for the blind to get funds to arrange for this work than it has been in the past.

CHAIRMAN HURLIN: Mr. Irwin, who has served on this Committee since it was established, has his feet on the ground; he does not want to support committees to recommend statistics unless something comes of it. It seems to me his own remarks this morning tend to show that, not only directly but indirectly, the preparation of good statistical data may help in work for the blind.

The final paper on the program is by Mr. Carris, whom you all know as managing director of the National Society for the Prevention of Blindness.

Preventing Blindness Through Statistics

Lewis H. Carris

I have been reminded several times during the past weeks when we have been preparing this program of the real reason for the existence of the National Society for the Prevention of Blindness. The aim of the National Society is to prevent blindness. Anything we can do which will save people from a world of darkness is worth doing.

You saw this morning how a committee on statistics of the

blind, such as this, has been able to point out certain activities growing out of the statistical surveys which have already resulted in reduction in the number of children suffering from blindness. This is an accomplishment which would have justified the expenditure of many times the money which has already been expended for the work of the Committee.

It also has done another thing for which Mr. Irwin and I congratulate ourselves. It has produced a definite joint project. We have always realized that while the activities of those who are working for the blind and the activities of those who are working for the prevention of blindness are largely in separate fields, yet there is a slightly overlapping fringe; and this is an example, we hope, of the ability of the two groups to co-operate where there is a common cause.

In presenting a summary of desirable developments in our prevention of blindness program which have been suggested to us by the activities of the Committee on Statistics of the Blind, I trust that I may be pardoned for repeating to some extent items covered by the previous speakers.

First, there should be adequate ophthalmological service for every institution and day school class. Many schools have had no service; in others the services are inadequate. As a prerequisite for such service, we should require that the eye physician meet the best standards of training and ability set up by his own profession, and his appointment be divorced from politics.

In some way, the American public must be educated to meet the needs of blind children, but not on a per capita basis. May I say that any scheme of fund appropriation for the support of schools for the blind which makes it possible to have more funds from the State for a larger enrollment, to some extent makes it just human nature to want a large enrollment in the school? Sometimes we have had reason to believe children are kept in the school when they could work better at home.

The school oculist should pass upon the suitability of applicants. He should, by a careful ophthalmological examination, determine the eye condition responsible for blindness. Through correspondence with physicians in attendance at the time of onset of blindness, or through field investigations by the school nurse or social worker,

he should determine the etiology of the eye condition. He should recommend treatment for improvement of vision wherever possible, carrying through for all children not provided for by private medical service. He should advise and arrange for necessary medical service to supplement eye care, where needed. Arrangements should be made for the proper examination and for the proper treatment. The eye physician connected with the school or institution should advise on the nature of eye work and environmental conditions, such as lighting, to make the best use of the remaining vision without harm to the eyes.

That is stating, rather categorically, the things which seem to me to be advisable for inclusion in the ophthalmological services to the schools themselves.

Then, the work of the physician needs to be supplemented by an adequate social work or public health nursing service attached to or available to the schools. These persons should have a general medical knowledge of high standard and a special knowledge of the eye. We wish that funds were available so that one of the graduates of our courses which are being held in Boston and in St. Louis might show what she could do in adequate social, or rather, medical-social work with a school for the blind. Such work needs to be undertaken.

What are some of these services? Contact with parents of pupils to secure their consent to corrective measures and operations is one of the first needs. Everyone recognizes that the parent in many instances needs to be shown to be convinced. We have not yet reached the advanced position which is taken in New York (and even in New York the law is not applied generally), which makes it possible to take the child from the parents' jurisdiction and to place authority for ordering an operation in the hands of the courts. We still, as a general procedure throughout the United States, must secure the consent of the parents for medical operation or treatment.

As mentioned above, one function of such a worker would be to investigate for the ophthalmologist facts concerning the cause of blindness. This worker would also arrange for examination and treatment of other members of the family, to prevent possible additional cases of blindness. How often it happens that children are admitted to the school for the blind and the fact that the under-

lying cause responsible for the blindness is a family trait is not discovered until too late, or, if it is discovered, there are no adequate services in the school for follow-up in the home. It is necessary to go back into the family and find out whether there are children who, in a few years, will also present themselves as candidates for admission to the school for the blind.

That would make the school for the blind an effective instrument in prevention of blindness, although it might lower potentially the number of children who will come to the school.

Of course, it is perfectly plain, from the figures which have been gathered by this Committee, that there is quite a number of children in schools for the blind throughout the country who should have adequate sight-saving class facilities. It would depend upon the local situation whether the sight-saving class facilities are to be placed in the school for the blind or not. Certainly, if these children, who have better than 20/70 vision, are to be kept in schools for the blind, sighted methods should be used. The National Society believes and has always advocated that those children be educated in public schools, provided that problems in transportation can be worked out, that they can get along with sighted people and that they do not have other problems which would lead them to be classified as blind children.

From some source, probably from the state, the schools should be provided with adequate funds for examination and corrective services. I don't know how it will be handled, or what the practice will be, but it seems to me that this is a specialized type of service in which there could be no objection to the use of state funds to keep people in the sighted world rather than to have them in a world of the blind. In the end, this would represent a real economy, both of money and of human resources.

There is need for further research. The first studies indicate what information is available but do not give satisfactory data on cause, and so forth. Additional information which could be secured through more complete examinations and investigations is needed. For example, let us consider ophthalmia neonatorum: how much of this is of gonorrheal origin and how much from other causes? What is the true syphilis figure? Information is now obscured by lack of diagnostic facilities. By more intensive study, also, the undetermined and indefinitely classified cases might be

cleared up. At least, we should have less and less of the "unknown" in new cases. There is also a very great need for real medical research in congenital blindness. It is not enough to say "born blind"; we must know the cause—syphilis, heredity or whatever the cause may be.

If someone would give us the funds, we should be glad to provide field workers who would work, under the general direction of the National Society for the Prevention of Blindness, to aid each state in its own set-up. I don't think that is going to be possible, but, if funds were available, that is the sort of service we should like to render. At least temporarily, I believe that there should be the greatest possible use made of volunteer services and funds and that there should be demonstration projects in selected areas to show the need and prove the worth of such services. We have already tried to find some funds for such a demonstration service but, so far, without success.

I have not dealt with statistics at all. I have tried to say what I hope, as a practical administrator, will be found of great value in our war against blindness.

Discussion

MR. CHARLES A. HAMILTON (Batavia, New York): Dr. Holloway's paper brought out very clearly that there were two classes of causes of blindness—etiological and topographical. In reporting from our school, for instance, supposing we have thirty new cases this year, which class of causes is the most valuable to be reported? Shall we say the person is blind through optic atrophy or blind because he had measles? Which class of causes do you want listed?

MISS KERBY: We are asking for both. We are asking, instead of the type of questionnaire which called for having the school make its own classification, that it send us a copy of the physician's report form for each pupil. The cases will be classified in the offices of the Committee, so that we can give cross-classifications.

MR. HAMILTON: You don't care what we report in our annual report?

MISS KERBY: We should like to have some more schools use the etiological classification. If you can give both the etiological and the topographical classifications, you will have solved the problem.

CHAIRMAN HURLIN: Isn't the real point, that the classifications which institutions and even some medical people have made in the past, have been neither one nor the other? Some causes have been etiological and some topographical, the result being there is no way in which one can evaluate the data and make comparisons with similar data of other people. Here is offered a standard plan; as Dr. Holloway suggested, it needs further attention, but at least it is a standard plan that will permit different institutions and agencies to compare results and will permit such organizations as this Committee to compile results from different sources. It is highly essential that both types of classification be made.

DR. EDWARD JACKSON (Denver, Colo.): The report illustrates, perhaps more forcibly than anything else could, the extent and importance of the statistical problem. The American attitude towards statistics may perhaps be characterized by the saying, "Figures do not lie, but liars can figure." Actually, statistics, of themselves, tell neither truth nor falsehood. The vital point upon which we depend in statistics is the basis of observation upon which they are founded. We must depend less on questionnaires and more upon questioners.

When the Federal Government was preparing for the 1930 census, the Colorado Ophthalmological Society asked that all investigations of blindness be followed up by observations by some member of the Society; that eye physicians should be relied on to furnish the ultimate facts for the statistics. The supervisor of the census soon found out by correspondence with Washington that there was no authority in the laws that would enable him to do that in the State of Colorado.

Now is the time to act for the 1940 census, to require that the enumerators report those persons that they find blind, and that cases be made the subject of special investigation by eye physicians, to find out which are blind and what are the causes of blindness. Just those two things would add to the value of the census.

It is just about a year since, through the liberal policy of the Society, we have had a social worker in Colorado. It has taught every one of us who has been interested in the blind the importance of follow-up work.

CHAIRMAN HURLIN: Dr. Royer has been one of the prime movers in this Committee; he started the work on this scheme for standard classification of causes and also the work which hasn't had so much emphasis here today, of devising a scheme for classification by degree of vision which, to my mind, is one degree less important than these other two that we have been talking about.

DR. B. FRANKLIN ROYER (Philadelphia, Pa.): If the managing directors of the two organizations that have sponsored the activities of this Committee have had any doubt prior to today's session as to the wisdom of financing it and of stimulating it, I think any such doubt must have been removed when they listened to the discussion of Miss Kerby and of Dr. Holloway this morning, particularly Dr. Holloway's clear-cut discussion of the reason for setting forth the etiological factors. You must all have recognized that unless you go back to treat the etiological factors, other tragedies may ensue, and you must have recognized that if treatment is not given, such tragedies may occur while the child is before you.

I remember very distinctly, some eight years ago, a discussion before the workers who were teaching the blind, in Atlantic City. Speaking, not from the statistical angle but more or less from the etiological factors, one of the superintendents of one of the schools related his personal observations in his own institution where several children had entered who were definitely blind so far as disorganization of the eyeball was concerned. There was nothing to be done for the eyes, but they had sat idly by, attempting to educate the children when the etiological factor responsible for the blindness kept on functioning. The children lost their hearing because of this same etiological factor—syphilis. That teacher said my remarks were to him a good deal like fastening blame on him; he missed his opportunity, he failed to grasp his duty. He further said that until that time they had not obtained permission from parents to treat any part of a child's system if they suspected such a thing as syphilis. He and those responsible for the management of that institution hadn't any grasp, statistically, of what could be accomplished and what might be accomplished.

I am sure from what was said here today that in dealing with the

blind, whether you are looking to improve their social conditions or their general health and happiness, you will see many opportunities to preserve such small amount of vision as they have, and to preserve their health in general. You must get back to the basic etiologic fault and get all that modern medical science can do to right that particular fault. The farther you go, the more you must be guided by exact statistics and exact interpretation from medical science and, co-ordinating the two, do all that may be done for humanity.

MR. GEORGE F. MEYER (Minneapolis, Minn.): For a number of years I have been interested in the aims and objects of the Committee and in the development of these statistics. I have followed, with a great deal of interest, the correction of the methods used in gathering statistics which would point a way toward a more accurate statement of the causes of blindness. I am glad to see that the Committee has focused its attention not only upon the causes of blindness, but upon the causes of defective vision. I think there is a very definite distinction there. We have been thinking in the past, very largely, in terms of the causes of blindness as they have created the group of children that have been assigned to the schools for the blind.

In the discussion going on here this morning, we have been thinking largely of the group with very low vision yet, by reason of the very much larger number, and by reason of the calamity that defective vision brings upon the individual that is in some respects almost comparable in his social and economic life to some aspects of total blindness, we need to focus our attention quite as much upon the causes of defective vision in the group that is above 20/200. Perhaps then we can interest the public not only in the prevention of blindness by conserving the little vision that some of these people still have, but in preventing the causes that lead to partial vision.

Eliminating Fireworks Accidents*

Joint Session with the American Museum of Safety

Chairman: Arthur Williams, President, American Museum of Safety

CHAIRMAN WILLIAMS: The huge radio audience which the National Broadcasting Company has brought together from coast to coast, and perhaps even some of the doctors, educators, insurance executives and safety officials in this room, are wondering why we come together on the seventh day of December to discuss accidents that occur on the Fourth of July.

Probably the simplest and best answer is to say we are here today to save the lives of scores of children who would otherwise be killed next July. We are here to save the eyes of hundreds of children—and of some grownups—who would otherwise be blinded seven months from today. We are here to save several thousand children from being seriously injured on the next Fourth of July—and on every Fourth of July thereafter.

We are undertaking this life-saving job six months in advance for two important reasons: first, the National Society for the Prevention of Blindness, which has long concerned itself with the prevention of fireworks accidents, has this year made some important discoveries in this field and quite appropriately chose this, one of the sessions of its annual conference, to make these discoveries public; second, to do anything as ambitious as one of our speakers, Mr. Louis Resnick, will propose here today, it is necessary to start at least six months in advance.

Before we ask Mr. Resnick to speak, I want to introduce the man with whom I am sharing the honor of presiding at this historic meeting—for I am sure it will turn out to be historic; he is probably the one man who least needs an introduction to this audience, Lewis H. Carris, managing director of the National Society for the Prevention of Blindness. Mr. Carris is known to some of you as an educator, for he was superintendent of schools before he came

* Broadcast through the network of the National Broadcasting Company, December 7, 1934.

to this Society some twelve years ago. He is known to others as administrator of a great national health organization concerned with the saving of what most people regard as their most valuable possession, their sight. He is known to still others of us as a generous colleague, for he has personally, and through his able staff, co-operated not only with the American Museum of Safety, but with local, state and national health and safety organizations throughout the country.

Co-operation in Eliminating Fireworks Accidents

Lewis H. Carris

MOST of you who live in the north are probably unfamiliar with the custom of shooting firecrackers during the celebration of the New Year—a custom found in many places in the South, as in New Orleans, for instance, where it is an old and well-observed tradition. In a sense, therefore, it is as timely for us to be discussing this question now as it would be if our conference were held a few weeks before the Fourth of July.

The problem of eliminating or greatly reducing the large number of injuries to children resulting from the widespread and careless use of fireworks is one that concerns not only the National Society for the Prevention of Blindness. Several other organizations, notably the National Safety Council and the American Museum of Safety, have conducted drives for many years in an effort to reduce the death and injury toll of fireworks. The success of any new plan will depend upon the continuous and close co-operation of all the interested groups.

Our efforts to reduce fireworks accidents have heretofore been largely confined to local laws prohibiting their sale, and public warnings concerning the danger to life and limb and to our eyes involved in the use of fireworks. These activities have not accomplished the purpose. I think Mr. Resnick will convince you that fireworks accidents still do a tremendous amount of damage. We need more fundamental methods of getting at this problem.

This Society has concerned itself with the possibility of reducing fireworks accidents in general, on the assumption that as such gene-

ral reduction takes place there is a reduction also in those fireworks accidents which result in serious eye injuries.

We had under way, until recently, the preparation of a so-called model fireworks ordinance through which we hoped fireworks accidents might be reduced. We have come to the conclusion, however, that it is almost as hopeless to try to control this situation by regulating the sale of fireworks at thousands of roadside stands and retail stores as it was to try to enforce prohibition of the sale of liquor. Many of us are becoming convinced that the only hope of effective control of the use of fireworks and, therefore, of fireworks accidents, lies in restricting the sale of fireworks at the source—that is, the factory.

However, it seemed to us desirable to seek the advice and co-operation of the many other agencies which have concerned themselves with efforts to reduce fireworks accidents before advocating such restrictive legislation. That is why we are here today. I am extremely pleased to say there are in this room representatives of practically every organization that has played any important part either in the sight conservation movement or in the general safety movement.

The program before us is not a one-man or one-agency job. The National Society for the Prevention of Blindness can play only a small part in this movement. We have on many occasions in the past enjoyed the co-operation of the organizations represented here and welcome this additional evidence of your interest in our work and in the common problem before all of us.

CHAIRMAN WILLIAMS: The next speaker possesses a great variety of personalities and records of accomplishments. He still likes to regard himself as a member of the Fourth Estate though it is fifteen years since he was enticed from an editor's desk in the Associated Press to the post of first publicist for the safety movement in this country. As publicity director, first for the National Safety Council, later for the American Museum of Safety, and, more recently, as industrial relations director of the National Society for the Prevention of Blindness, he has probably done as much to make America safety-conscious as any other person in this country. This may come as a surprise to some of the younger

members of the press who happen to know him as spokesman or public relations counsellor for the field of welfare and philanthropy. It may surprise some of the ophthalmologists, insurance executives and sight conservationists here who know him as co-author with Mr. Carris of the book, *Eye Hazards in Industrial Occupations*. However, when you combine all these capacities and records of accomplishments, you get a master of the art of public education. You get a publicist whose tools are not black magic or window dressing, but facts, the ability to unearth them, and the courage to present them, even when they are not always pleasant to face.

The Toll of Fireworks Accidents

Louis Resnick

JUST before I came in here, my very efficient secretary handed me a little note which said, "When statistics failed to convince a certain committee of aldermen, those interested in the bill showed the aldermen a blind child, one with a leg missing, one even more badly mutilated, and this brought action." She was speaking of a meeting at which a fireworks ordinance was considered. I am not going to parade before you all the persons mutilated by fireworks in the city of New York because it would take all afternoon and the radio audience couldn't get the effect because we haven't yet developed television to that point. But let me put to you a few questions which should visualize better than any other way the statistics about which I am going to speak. Some of you may feel these are horrible questions to pose, but we might as well look the facts in the face:

Have you ever seen a child with one eye closed for life?
Have you ever seen a little boy with half his face shot away?
Have you ever seen a little girl in a lacy holiday dress catch fire?
Have you ever heard the cry of a child afire?
Have you ever smelled the odor of burning human flesh?
Have you ever played with a child on your knee in the morning and seen it dead in the afternoon?

That is the sort of thing we are talking about when we talk

about fireworks accidents. Every one of the clippings in your hand represents that kind of a situation. And we have thousands more where those few came from.

In the matter of fireworks accidents, most of us are a good deal like Will Rogers—all we know is what we read in the newspapers. That is why there is a mistaken notion that we have a sane and safe Fourth of July in America and have had sane and safe Independence Day celebrations for many years. For example, on the fifth of July this year, people throughout the country read in the newspapers that this was the safest Fourth in many years and that there had been only one death due to fireworks.

As a matter of fact, the National Society for the Prevention of Blindness has on hand the names of 29 persons who died from fireworks accidents celebrating the Fourth this year. We have on hand the names of more than 2,600 persons who were seriously injured in fireworks accidents during that period, and this, I am convinced, is only an insignificant part of the toll of fireworks casualties this year.

The newspapers themselves are not entirely to blame for this mistaken notion. The trouble is, first, that there is no organization or government department which requires the reporting of fireworks accidents. On top of that, so much to-do has been made over the reduction in the number of accidents that the general impression is that the Fourth of July, as celebrated today, is really a glorious Fourth, in which everybody has a good time and only a few people get their fingers burnt.

Let's see just how safe this last Fourth was.

Here, in New York City, where we have a law prohibiting the sale of fireworks and an excellent Police Department to enforce the law, the hospitals on July 5 this year reported 2,600 casualties from fireworks, or 1,500 more than last year. Of these 2,600, only those few whose names appeared in the newspapers are included in the total of 3,000 for the entire country reported in this Society's survey of fireworks casualties.

New York is no worse in this respect than cities throughout the country. Even a casual reading of the clippings shows that in large numbers of cities in this fifth year of depression, when more than 10,000,000 people are out of work and millions are on relief,

the toll of fireworks accidents was greater than in many previous years.

The situation about the country as a whole is, perhaps, best described by a paragraph which appeared in *The Philadelphia Public Ledger* on July 5: "While Philadelphia and nearby sections today counted a toll of nearly 300 fireworks casualties, making this year's Independence Day celebration the most disastrous since the World War, Fire Marshal James O. Mulhern called the day 'the quietest and nicest Fourth of July in the history of the Fire Marshal's office.' "

This statement will come as a surprise to those few in the audience who, several weeks ago, attended a private conference called by this Society in which it was said that no fireworks accidents had been reported from Philadelphia either this year or in a similar inquiry several years ago. A number of the representatives of safety organizations present on that occasion thought here was a solution of the problem—thoroughgoing local enforcement.

An analysis of newspaper reports of fireworks accidents during the two weeks preceding and the two weeks following the Fourth of July, made several years ago by the National Society for the Prevention of Blindness and the American Museum of Safety, showed—

that 161 persons had been killed by fireworks,
that 52 of them were children less than 5 years of age,
that 54 burned to death when their clothing was ignited by fireworks or bonfires,
that 20 children were burned to death by "harmless sparklers,"
that 21 children died as the result of eating fireworks,
that 32 persons were shot by "unloaded guns" or stray bullets,
that 30 persons lost one or both eyes,
that 300 others suffered eye injuries,
that 1,900 persons were otherwise injured.

All of this with ten states not heard from at all.

Personally, I am convinced that if a thoroughgoing check were made of fireworks casualties this year, or in any recent year, it would be found that the situation is practically as bad as it has ever been.

How bad is that? I will let you judge for yourselves. The Fourth of July, you know, commemorates our independence acquired in the Revolutionary War. The *World Almanac* tells us that 4,044 Americans were killed in that war and that 6,004 Americans were injured.

As against this, in the last 30 years alone, 4,290 Americans were killed in fireworks accidents, and 96,000 Americans were injured in fireworks accidents.

And this does not include the many deaths which occur long after the Fourth of July as a result of injuries received on the Fourth; it does not include the drownings and automobile fatalities which regularly occur on the Fourth of July.

To cap the mistaken notion that we already have a reasonably safe and sane Fourth, there appeared in newspapers throughout the country recently a dispatch from Washington which had led many people to believe that in the future the danger of accidents from fireworks would be altogether removed. Let me read you a few lines from this statement:

> Washington, Aug. 27.—The "riot" has almost entirely been eliminated from "patriot" for the American boy as a result of an agreement of manufacturers of firecrackers with the NRA today, by which magnesium and aluminum, the elements often productive of accidents, will no longer be used in the manufacture of firecrackers sold in this country.
>
> The parties to the code agreed specifically that production and sale of fireworks containing magnesium or aluminum, which assists the explosion, should be declared an unfair trade practice.
>
> There will be plenty of sound in the firecrackers made hereafter, the NRA promised, but the likelihood of serious consequences from their use will be largely eliminated.

I am sorry to say that after a conference with doctors, safety engineers, and chemists, I am convinced that this NRA agreement with the manufacturers of fireworks will not in the least solve the fireworks accident problem.

What the dispatch from Washington did not say was that aluminum and magnesium are more expensive than the black powder that is now being used in fireworks and that, probably, is why the manufacturers agreed to eliminate them. They admit

the new fireworks will have a bang. To have a bang, you must have an explosion, and so long as you allow children to play with explosives you will have serious fireworks accidents.

Now what is the solution, if any? Until recently—as Mr. Carris explained—we thought the model ordinance was the solution, but when we began to check the cities from which long lists of casualties are reported each Fourth of July against the cities having fireworks ordinances, we found that practically as many accidents occurred in cities having ordinances as in cities not having any. The reason is simple. In the first place, fireworks are sold in groceries, candy stores, stationery stores, and thousands of other small retail shops; and in any large city it is almost as difficult to enforce the law concerning the sale of fireworks in these small shops as it was to close up the thousands of speakeasies in New York City. In the second place, every city having a fireworks ordinance is surrounded by suburban towns and good roads, which from June 15 until July 5 are thickly populated with roadside stands selling fireworks openly and legally because they are just outside the city limits or, even, village limits. In the Society for the Prevention of Blindness, we have come to the conclusion that the only effective way of keeping fireworks out of the hands of children and others who do not know how to use them would be to regulate the sale of fireworks at their source, the factory. We asked fire chiefs and police chiefs throughout the country what they thought of this point of view, and not one disagreed with it.

We brought together several weeks ago the executives of a dozen or more national safety agencies concerned with this problem and laid before them a statement, somewhat similar to that which appears on this program, as a proposed resolution.* We had almost unanimous agreement with the point of view expressed there, and we had hoped to be able by today to announce the formal adoption of this resolution by the many agencies concerned. There has not, however, been time for all of them to put this question before their various boards and committees and, consequently, the resolution is being circulated among you now, not for action today but as something to think about and discuss with your respective Executive Committees and Boards of Directors.

* This resolution is published on page 46 of this issue.

As Mr. Carris explained, the interest of the National Society for the Prevention of Blindness in this subject is necessarily rather incidental. This is a problem primarily of the organizations devoted to the general subject of safety, and I hope that these organizations, under the leadership of the American Museum of Safety and the National Safety Council, will shortly after today's meeting appoint a joint committee to consider the adoption of this suggested resolution as a program of action. We already have a communication from Franklin H. Wentworth, managing director of the National Fire Protection Association, that his organization has approved the resolution.

I am sure that I am expressing the views of Mr. Carris and of the National Society for the Prevention of Blindness as a whole when I say that if the several national safety organizations undertake such a program as is proposed in this statement, the National Society for the Prevention of Blindness will co-operate to the maximum of its ability. This Society feels that its obligation in this regard is, for the present, fulfilled by the making public of these facts and conclusions—not only our conclusions but those of fire chiefs, police chiefs, and others actively concerned with the prevention of fireworks accidents throughout the country.

For the benefit of the radio audience, chiefly, which hasn't before it the resolution that you have, I should like to read some questions on which the resolution is based, as well as the resolution. These are the questions that the National Society for the Prevention of Blindness this year submitted to police chiefs and fire chiefs throughout the country.

"We are writing now to ask your opinion—not for publication or quotation, but simply for our own guidance—on this matter. Specifically, do you agree with the point of view that complete suppression of the sale of fireworks by grocery stores, candy stores, stationery stores, and other small retail merchants in the city—to say nothing of roadside stands outside the city—is hopeless of attainment?

"Secondly, do you feel that a much greater degree of control of the sale and use of fireworks and, therefore, a greater reduction in the number of fireworks accidents would be obtained through the

limitation of the manufacture and sale of fireworks by the manufacturer to the following consumers:

(a) industrial consumers, such as railroads, steamships, quarries, etc.;
(b) the army and navy departments;
(c) municipal, state or county departments; and
(d) such private individuals as can prove that the fireworks will be exhibited or consumed under the personal supervision of a pyrotechnical expert?"

Just one more word. At this meeting of the executives of the national health and safety organizations, a few weeks ago, when, as I said, most of the elements of the proposed resolution were approved, much emphasis was placed on the need of public education and of securing co-operation from the manufacturers. There has been co-operation from fireworks manufacturers all through these years and there has been a lot of public education. I, myself, have written a piece of educational material in the form of a warning concerning the danger of fireworks every year for the last fifteen or sixteen years. I think both the co-operation of fireworks manufacturers and the campaigns of public education have done some good. I don't think they have done an awful lot of good. I don't believe you are going to save many children from being burned, blinded or mutilated, by the co-operation of manufacturers. I don't think you are going to save them by education alone. I think you need both of those, plus either national or state legislation directed at the factory, not at the consumer. I appreciate that state and federal legislation are exceedingly difficult to get, but that is the cure, if you want it.

Editor's Note.—The resolution on the reduction of accidents from fireworks is herewith presented.

Resolution for the Reduction of Fireworks Accidents

WHEREAS commemoration of our Independence, through use of fireworks, has resulted in greater loss of life and greater toll of personal injury and property loss than occurred in the winning of this Independence, and

WHEREAS, despite numerous local ordinances prohibiting sale and use of fireworks and repeated warnings concerning the danger

of accidents from fireworks, children are still being killed by scores and injured by thousands through fireworks accidents each year, and

WHEREAS complete suppression of the sale of fireworks by retail merchants—even in cities having ordinances prohibiting the sale of fireworks—is practically unattainable, and

WHEREAS suppression of the sale of fireworks in cities—if this were possible—would be nullified by the widespread roadside sale of fireworks in suburbs and rural communities adjacent to cities, suppression of which also seems impracticable,

Therefore Be It Resolved by this conference of representatives of national and local agencies concerned with sight saving, public health, and public safety, assembled under the joint auspices of the American Museum of Safety and the National Society for the Prevention of Blindness,

First, that the greatest hope for effective control of the sale and use of fireworks, and a consequent reduction in the number of fireworks casualties, lies in control of the manufacture and sale of fireworks at the source, namely, the factory.

Second, the manufacture and sale of fireworks should accordingly be restricted—through national and state legislation—to the following:

> Army and navy departments of the United States Government;
>
> Railroads, steamship lines, aviation companies, quarries and other industrial or commercial concerns requiring pyrotechnics for the normal conduct of their business;
>
> Federal, state, municipal or county governments, and such incorporated clubs or associations as can guarantee that fireworks will be discharged on their premises under immediate supervision of pyrotechnic experts.

Third, commemoration of Independence Day, through the use of fireworks, firearms and bonfires, should be sharply discouraged, if not altogether discontinued, and in its place there should be developed, through an intensive nation-wide campaign of education, programs of patriotic celebration in which athletic events, pageantry, and other forms of wholesome recreation would eventually eliminate children's desire for the excitement of fireworks, firearms, and bonfires.

CHAIRMAN WILLIAMS: It would be difficult to express our appreciation of the presence here today of one of America's most distinguished sons. My acquaintance with him dates back to his

first year as assemblyman at Albany, when he introduced a bill in the Legislature in reference to electric light wires on the highways of the state. Calling at the Capitol and asking for the author of the bill, I was shown a stripling of striking personality walking down the center aisle of the Assembly Chamber. Introducing myself and telling my mission, I was answered with, "A few days ago a small boy climbed an electric light pole, touched one of the wires and fell to the ground dead. We cannot permit our boys to be killed by you electric light men." My reply was that every electric light man in the state was in full sympathy with the Assemblyman's thought and would co-operate with him to the utmost in the development of his safety plans.

Thus began one of the most treasured friendships of my life.

If that boy's deplorable death was the cause of that young Assemblyman's lifelong devotion to the safety and general welfare of the men and women who work, and their children, that boy did not die in vain. Hundreds of thousands, perhaps millions (for this meeting occurred thirty years ago) of injuries and accidents have been prevented with all the attendant suffering, misery and death, under his guiding genius and inspiration.

Everyone in this great audience, seen and unseen, by this time must know the gentleman of whom I am speaking, one of New York's greatest governors through four administrations, one of the nation's greatest benefactors, the Honorable Alfred E. Smith, who will now address us.

Preventing Fireworks Accidents

Alfred E. Smith

A SITUATION in which children are killed by the score and injured by the thousands in the business of celebrating the fact that this country is a free and independent democracy, and not a colony of England, is a situation which calls for correction and cure, if anyone can produce a prescription for that cure.

Whether the proposed resolution you have in mind is the right prescription, I do not know. I do know, however, that fireworks manufacturers are people. They are fathers and, as such, have

the same human regard for life and for the safety of their own children and other people's children that we all have.

I say, therefore, that if you want to do something new to cut down the annual casualty list due to fireworks accidents, go first of all to the fireworks manufacturers. See how far they will co-operate. You may find they are willing to go farther than you think in substituting carefully organized and expertly supervised exhibitions for the indiscriminate use of fireworks by every Tom, Dick and Harry. That is the first step.

Now, as to more legislation, state or national. There are entirely too many laws on the statute books already. Too many laws are enacted by every state legislature and by every municipal assembly. Nobody knows this better than I do and nobody has said it publicly more often.

But—laws have done a lot of good in the field of safety. They have saved a number of lives and they have saved a lot of misery among the dependents of killed and injured workmen. You can't get away from the fact that it was the Workmen's Compensation Law that really got the safety movement in America started, and I am glad to say I had a strong hand in putting through these laws in the State of New York.

The legislature of this state deserves as much credit as any safety organization for the success of the industrial safety movement and, for the benefit of the radio audience, I will say the same is true of the other big industrial states—Pennsylvania, Ohio, Massachusetts, Illinois, New Jersey, and far-off California. The legislators of these states who put through the original Workmen's Compensation Laws, and who are improving these laws from year to year, deserve as much credit for the lives saved and the eyes saved as do you safety men and you public health workers. I know you will be the first to admit this because many of these laws protecting the eyes and the lives of workingmen and women have been written and passed at your request.

I repeat, regulatory legislation has done a lot of good in this country, but there is a point at which its value ends, and that is the point at which the law cannot be enforced because it does not express the will of the people or a majority of the citizens. A year ago we, as a nation, admitted that.

The National Society for the Prevention of Blindness, the American Museum of Safety, and other safety organizations represented here, have already done much to bring about public sentiment in favor of a genuinely sane and safe Fourth of July. But that job is not done yet. You cannot afford to let up on your educational work and think that some legislation alone will do the trick. I do not need to impress upon you the fact that legislation —even good legislation, needed legislation—is not easy to get.

I am for a Fourth of July in which not a single American child will be killed, in which not one boy will lose an eye, in which no child will be burned. My advice on how to get that kind of a Fourth of July is this:

First, get the co-operation of the fireworks manufacturers themselves;

Second, keep up your educational work;

Third, go after state-wide legislation, but plan it carefully and work together like a single team and not as a dozen separate organizations.

Among the other discussants commenting on the necessity for increased efforts to prevent fireworks accidents were EDWARD M. VAN CLEVE, principal of the New York Institute for the Education of the Blind; DR. EDWARD JACKSON, ophthalmologist, Denver; DR. WILLIAM F. SNOW, general director of the American Social Hygiene Association; and WALTER G. KING, director of the Safety Division of the American Optical Company.

Symposium on Prenatal and Congenital Infections in Relation to Blindness and Impaired Vision

Joint Session with the American Social Hygiene Association and the National Health Council*

Chairman, William F. Snow, M.D., General Director, American Social Hygiene Association

THE chairman called attention to the presence in the audience of health officers, physicians, commissioners for the blind, nurses, social workers, and others, who have had wide experience in dealing with the prevention of blindness and who the chairman hoped would participate actively in the conference. Dr. Klauder, associate professor of dermatology and syphilology, Jefferson Medical College, was called upon.

Scientific Basis for Control and Prevention

Joseph V. Klauder, M.D.

As you know, interstitial keratitis and optic atrophy are the most serious manifestations of syphilis that cause impaired vision and blindness. Perhaps some of you may not know what interstitial keratitis is. It is an inflammation of the cornea, the transparent portion of the eye, which occurs only in children whose parents have syphilis; the children have congenital syphilis.

Optic atrophy is a degeneration of the optic nerve confined to those who have acquired the disease, in contrast to those in whom it is congenital.

During the six years that the clinic for the treatment of ocular syphilis, at the Wills Eye Hospital in Philadelphia, has been in

* For convenience in reading and reference, the proceedings of this round table have been edited and rearranged. A complete transcript is on file in the office of the National Society for the Prevention of Blindness.

operation, 372 patients with interstitial keratitis and 214 patients with optic atrophy have been treated. My presentation is based largely on a summary of the study of these cases. In a consideration of interstitial keratitis as a cause of impaired vision and blindness, the following factors are pertinent.

A statistical study of the incidence of congenital syphilis indicates it to be from one-half per cent to three per cent of the total population.

The basic principle in the prevention of interstitial keratitis is treatment of the pregnant woman who has syphilis. A number of writers reporting a larger series of cases have shown how effective anti-syphilitic treatment, when given to the pregnant woman, is in preventing transmission of syphilis. The Wassermann reaction, which is a blood test to determine the presence of syphilis, should be performed routinely on every pregnant woman. Anti-syphilitic treatment should be administered to every pregnant woman who has syphilis, and should be repeated at each pregnancy. If the treatment is given before pregnancy and throughout pregnancy, or even if it is given only during pregnancy, the proportion of healthy children approaches one hundred per cent.

The second principle in the prevention of interstitial keratitis concerns the early diagnosis of congenital syphilis, ideally, in infancy. The earlier anti-syphilitic treatment is begun, the better the results will be.

The third principle in the prevention of damage from interstitial keratitis concerns its early diagnosis. It is to be recalled that interstitial keratitis usually appears in children from the ages of eight to fifteen years, although it may appear as early as three years and as late as forty years.

In a study of our cases at the Wills Hospital, two circumstances stood out. One was the delay in the diagnosis of interstitial keratitis; the patients came mostly from outlying districts. That group, however, was not a very large one. The second circumstance concerned the treatment that was administered to such patients.

There is need for standardization of the treatment of interstitial keratitis, for studies similar to those on early syphilis conducted in three or four large syphilitic clinics throughout the country, and

recently published by the United States Public Health Service. If the National Society for the Prevention of Blindness or the American Social Hygiene Association would act as a clearing house to which a large number of clinics providing treatment for interstitial keratitis could send their data, such a step would, I think, be a very constructive one.

Our goal in the treatment of interstitial keratitis will not be attained until we prevent involvement of the second eye. To those of you who do not know what I mean, I may briefly say it is characteristic of the disease to appear first in one eye and then, after a lapse of a few weeks, a few months or a few years, in the second eye. What is greatly needed is a study to discover what causes involvement of the second eye. Admirable opportunities are available for studying interstitial keratitis, since it can be produced experimentally in rabbits. May I make a plea to ophthalmologists and to others that they become interested in the various aspects of syphilis in relation to interstitial keratitis and optic atrophy?

Another problem concerns the social-economic aspect of syphilis: the infection of the brothers and sisters of patients with interstitial keratitis, and the infection in the mother and father. For example, in one family of three children, the boy had interstitial keratitis. His mother had the disease. Naturally, from what you have heard me say in relation to the congenital aspects of interstitial keratitis, his little sister had it. The youngest was apparently normal. The father, a relatively young man, had a positive Wassermann reaction; with the disease ahead of him, speaking from a statistical standpoint, he refused treatment. He was unable to attend the clinic during the day.

Another child whose mother had interstitial keratitis gave every evidence of the fact that she had congenital syphilis. The grandmother was also examined by us and she too had the infection and a positive Wassermann reaction. There was a transmission of syphilis through three generations. That, fortunately, is rare.

In another family, the mother was the second wife of the father. Syphilis was transmitted through two wives and two sets of children over a period of seven years. Both the oldest child of the first marriage and the oldest child of the second marriage had interstitial keratitis.

In a discussion of optic atrophy as a cause of impaired vision and blindness, the following is a brief summary of our study of the 214 patients at the Wills Hospital.

Three-fifths of the patients were between the ages of thirty and fifty. The duration of the infection varied from ten to twenty-five years. The chief complaint was impaired vision and usually remained so throughout the period of infection. By that, I mean, they presented very few other symptoms of syphilis of the nervous system, of which their optic atrophy was a manifestation. These patients can be placed in the following four groups:

Group 1 is composed of men between the ages of thirty and forty, in whom the onset of optic atrophy is so rapid that early diagnosis is difficult.

Group 2 comprises a large percentage of patients, unfortunately, too large a percentage, in which one factor stands out very conspicuously: At the onset of their impaired vision, they visited opticians to obtain glasses; when the glasses did not improve their vision, they visited a second, then a third optician, making the rounds of opticians over a period of months and, indeed, years.

The third group received indifferent treatment; and the fourth group, a rather small percentage, had had adequate previous treatment.

The unfortunate circumstance is that the majority of these patients were unaware of their infection and, for that reason, received no previous treatment. Most of them, when they first came to us, had considerable impairment of vision. In many, only light perception, or recognition of finger movements, was present in one eye. In the other eye, they had visual acuity as low as 3/60 or 6/60. Our problem is to get patients to come to the proper place for treatment at the early stages of the disease, not as a last resort, after the lapse of months or, more likely, years.

Measures to prevent optic atrophy should include early diagnosis and adequate treatment of early syphilis; but, since many of these patients were unaware of infection—the visual difficulty was the first symptom of the disease to them—early diagnosis cannot be of much value in preventive measures.

The second step to prevent optic atrophy is early diagnosis of neurosyphilis; any remarks in that regard are addressed more to

doctors than to laymen. The pupillary abnormalities are the first objective signs of neurosyphilis. If a pupillary abnormality is discovered in an examination of a patient, its status should be determined. The spinal fluid should be examined in every patient who has irregular pupils. Ideally, such examination should be performed in every syphilitic patient whose infection is of longer duration than ten years. Any physician who has a patient, particularly a male, between the ages of thirty and fifty, who complains of impaired vision, should have optic atrophy uppermost in his mind.

CHAIRMAN SNOW: Dr. Cutler's part in opening this round-table discussion has been divided under introductory remarks which I shall ask him to make now, and replies to questions which may be addressed to him later, as the ophthalmologist in our discussion. Dr. Cutler, as most of us know, is medical consultant of the National Society.

Clinical Aspects of the Problem

Colman W. Cutler, M.D.

It is a privilege to speak here, and frankly. I am reminded of an actual incident: A wise mother, who was asked by a suitor for her daughter, replied, "Let us talk it over," meaning, perhaps, ways and means in these parlous times, but she added, "and bring your Wassermann." The youth might well have inquired whether the formality was mutual; it should be, always. This lack of frankness in the public mind and among some physicians is in part responsible for the slow progress in dealing with the venereal diseases.

Dr. James Kerr wrote, in 1928, in *Fundamentals of School Health:*

"In the first medical survey which the writer made in the London Blind Schools, in 1903, 42 per cent were assigned to ophthalmia neonatorum; but as there were many others whose troubles were probably due to this, but of whom there was no satisfactory history, it was felt that an estimate of 50 per cent would not be exaggerated. The number is slowly falling. In this respect large American cities can set us an example. The cases in places like London or Manchester should be one-tenth of their present numbers.

"Ophthalmia neonatorum is also the cause of much visual deterioration from corneal scarring in children not blinded.

"The next large group is interstitial keratitis. Many of these cases come on during school life, although the cause is congenital and some are also associated with deafness. Much can usually be done for vision by early and energetic treatment, but the hearing is rarely bettered, and in bad cases the individual is wrecked, although not totally blind or totally deaf. The prevention of syphilis and its effects in this generation would clear the schools of this group in a decade."

I have been asked to speak on the clinical aspects of this problem.

It is not possible to describe the course of a case of ophthalmia neonatorum. To a conscientious physician, and to the nurses who must be trained for their especial work, which is perhaps more exacting than that of the doctor, for the secretion must be removed constantly and so carefully that the cornea is not touched, the task is not to be put in a few words. Ophthalmia neonatorum should be reportable. The diagnosis, by means of a smear, is made the instant congestion and secretion appear; then the struggle begins to save the transparent cornea. This fight for vision may last for weeks or months before the eye becomes normal. Isolation and special nursing, to protect others, are necessary. Most hospitals are not equipped to care for the children. I have seen several infants within the past two months who had to be transferred to Bellevue, where they received careful treatment. It was the neglected cases which formerly were the most pitiful, before the use of silver nitrate became mandatory in most states.

With regard to syphilis and the eyes, we must remember that we are dealing with a systemic disease, one that involves any or all of the organs. The most evident of the congenital or prenatal infections is interstitial keratitis, but the deeper parts of the eye are as often involved. And this, as you have heard, can be prevented, probably in a large majority of cases (how many we do not yet know) by a simple blood test in pregnancy and by adequate treatment. I should like to read a resolution which was presented yesterday at the meeting of the Board of Directors of the Society:

"The National Society finds itself more and more called upon to co-operate with some of the larger movements for health which would carry with them the by-product of prevention of blindness

and conservation of vision, as, for example, the joint campaign for the elimination of prenatal syphilis. Dr. Park Lewis has been particularly interested in some of these movements and has prepared the following resolution for consideration at the present meeting of the Board of Directors:

WHEREAS, Congenital communicable diseases affect not only the individual but society at large, as well as the progeny of those who marry, thereby increasing the number of the unfit and adding largely to the unhappiness and to the economic burden of the world,

Therefore, be it Resolved, That the National Society for the Prevention of Blindness invite the American Social Hygiene Association, the National Tuberculosis Association, the New York Academy of Medicine and the New York State Medical Society to co-operate in requesting the State Board of Health to prepare a bill for introduction at an early session of the Legislature requiring that the issuance of marriage licenses in the State of New York shall be contingent upon the presentation of adequate assurance that no serious, contagious condition exists in either of the parties proposing to marry, which would menace the health of the other, the offspring, or society in general."

CHAIRMAN SNOW: I have a series of questions which have been handed to me. I shall hold these, together with the comments and questions presented from the floor, until we have heard from Dr. Rice, commissioner of health of the City of New York, who will speak as a public health administrator.

Health and Social Factors

John L. Rice, M.D.

I am glad to concur with the previous speaker's remarks on getting information on syphilis and gonorrhea to the public. Two or three months ago, I was invited to speak before a Kiwanis Club in New York on what the taxpayers in that group get for their money in the way of public health from the New York City Health Department. The talk was also being broadcast to the public.

I began by telling of the activities of the various boroughs. I think at the end of about the first five minutes I came to the matter of communicable diseases, which was followed with the venereal disease work. I no sooner had referred to "venereal diseases"

when I heard a commotion in the corner of the room; the kindly chairman had been whispered to and said, "You can't talk about venereal diseases." I hesitated for a moment and then went on with the rest of the talk.

A friend of mine, who is the president of the Connecticut State Medical Society, wrote me a letter the following day, expressing his appreciation for the talk and his regret that I had been cut off from talking about venereal diseases on the radio. It seems to me that the proper use of the radio is one of the steps in the advancement of public health education upon this important group of communicable diseases.

A few nights ago, I was coming in from Queens and I had as driver of the car a man of thirty or thirty-five, a pretty intelligent sort of person. On the way back, he asked, "Is it true that physicians cannot ethically treat cases of venereal diseases? Is there something in the state medical regulations which prohibits the ethical doctor from doing this or from giving treatments for venereal diseases?"

Those are two experiences which make me think we still have a long way to go in getting this information over to the public. I want to quote a few figures to show why health departments are deeply concerned with this problem as part of the larger question of protecting the health of mothers and children.

For years the Department of Health has called attention to congenital syphilis (see *Weekly Bulletins*), urging routine Wassermann tests on all expectant mothers. In the United States, various surveys show the following incidence of syphilis in expectant mothers: white women, from 1½ per cent to 16 per cent; and colored women, from 12 per cent to 34 per cent. The history of a patient, together with even a careful clinical examination, reveals only a small number of those infected. Thus, in Boston, clinical evidence alone revealed 2.2 per cent; while in this same group of women, with the aid of Wassermann blood examinations, 9.2 per cent were discovered infected. In Philadelphia, in 11 prenatal clinics where Wassermann blood tests were done only as they seemed indicated, only 1 per cent were diagnosed as infected; but when routine tests were made 5 per cent were discovered to be infected. In New York City the Health Department operates 20

prenatal stations. During 1933, 7,985 expectant mothers attended these stations. Routine Wassermann tests showed 4.6 per cent as having a syphilitic infection. Of the mothers coming to these stations, 30 per cent came during the first five months of pregnancy, 33 per cent during the sixth and seventh months, and 37 per cent during the eighth and ninth months.

In the case of syphilitic infection, the treatment of expectant mothers after the fifth month of pregnancy is generally of little value so far as preventing infection of the baby is concerned. This shows how unfortunate it is that 70 per cent of these mothers first came to the station after the completion of five months of pregnancy. This is one very important respect in which our prenatal work must be improved, for the health of both the mother and the child.

Our experience shows one other important need, namely, suitable treatment facilities for syphilitic expectant mothers. In most cases these women must be referred to the regular venereal disease clinics. I believe we should arrange to give this group special treatment, setting aside, perhaps, special days or hours when they may be given it. The general figures for syphilitic infection in expectant mothers for the city show 4.6 per cent; and for the central Harlem district, 12.8 per cent. This is one of the reasons why the health department needs to give special attention to Harlem.

We are attempting in our budget for next year to get additional funds so that more of these patients may be treated, and so that we may also do more epidemiological work in tracing the cases. We do a good deal on following up the sources of typhoid fever, diphtheria, and other diseases, but there are only a few places in this country and in other countries where real epidemiological work has been attempted in the control of syphilis. I think the time has come when we should be doing much more in New York City in follow-up of venereal disease cases.

CHAIRMAN SNOW: We now have before us the scientific, medical, and public health bases for action in preventing blindness from syphilis, and in reducing the extent of damage so far as possible after infection has occurred in the mother or child during or following pregnancy. We have also, of course, incidentally brought out

the principles of action in dealing with the prevention of blindness from the other important infection in the so-called venereal diseases group—gonococcal infection. How shall we begin our general discussion? If it meets with your approval, I shall ask Dr. Klauder to include in his further remarks answers to some of the written questions handed to me.

DR. KLAUDER: The first question is: In clinics where diagnosis and treatment of diseases of the eye or of visual defects are handled, what, in summary, should be the routine procedure for the discovery of syphilis as an etiologic factor? The answer should, very emphatically, be the routine Wassermann test. The second phase would be the history in relation to syphilis, and, third, the state of the pupils with reference to their irregularity, as a manifestation of syphilis of the nervous system.

The second question is: It would be of interest to know whether the drugs used in the treatment of syphilis ever result in impairment of vision.

I suppose the person who had this question in mind was wondering if the treatment of syphilis by any chance may contribute to the onset of blindness. There is one very well recognized drug used in the treatment of syphilis that does involve the optic nerve and produce an impairment of vision through a toxological reaction of the nerve, but it is used only in the treatment of certain cases of syphilis. It is used with the full recognition of that possibility. There are precautions that are carried out and, on the whole, the possibly disastrous result does not, I am sure, constitute any factor in the optic atrophy resulting from the disease itself. The routine treatment of syphilis does not in any way cause damage to the optic nerve.

The third question: Are the results of treatment of interstitial keratitis reasonably good? What percentage of cases so diagnosed is cured, with sight restored?

To answer that question briefly is difficult. On the whole, the results are good, one may say excellent, particularly if treatment is started early, before the cornea is damaged.

CHAIRMAN SNOW: There is one question upon which I think we should appreciate Dr. Holloway's comment: Is acquired syphilis often a cause of blindness?

DR. THOMAS B. HOLLOWAY (Philadelphia, Pa.): Yes, very frequently. For example, acquired syphilis is usually the cause of so-called neurosyphilis, and so-called locomotor ataxia. It is perfectly true, there are a juvenile form of neurosyphilis and a juvenile form of tabes that give rise to optic atrophy. Here the influence on the optic nerve is from a third to a half the influence met with in the acquired type of tabes. Some of the statistics presented by Dr. Klauder referred to acquired syphilis. A third of the patients were over the age of thirty. It is likewise a fact that acquired syphilis can produce a form of interstitial keratitis, but it rarely does.

I might say that syphilis can affect any portion of the eye; many of the cases of iritis, or corneo-iritis, or what is described as uveitis, are caused by syphilis. In statistics from clinics that serve white people, the incidence of syphilis may be 13 per cent; but, frequently, the incidence for syphilis is complicated by other conditions that may be associated with it. In some of the clinics in the South, the incidence of syphilis has run as high as 75 or 80 per cent. I think the figures are exaggerated, since they are based on syphilitic treatment. Some of the treatments given to syphilitic persons will benefit ocular conditions that are not necessarily syphilitic.

CHAIRMAN SNOW: Dr. Clarke, I have been asked to call on you as chairman of the National Health Council's Committee on Congenital Syphilis.

DR. WALTER L. CLARKE: Congenital syphilis is a subject which challenges the interest of all organizations that are interested in children, and it is upon the basis of that interest that we have approached all the health agencies, members of the National Health Council, and a great many others, to join in a campaign against congenital syphilis. It is, perhaps, the most strategic attack of all, upon any phase of syphilis, for the reason that we can obtain dramatic results by comparatively simple methods.

I should like to illustrate with a concrete example what I have in mind. Shortly after the War, a young officer retired from the army, married, and in time, he and his wife had two children. The children appeared to be quite normal youngsters until the girl, who was the older, was about the age of eight; then the school doctor

discovered there was something wrong with her eyes. He sent her to an ophthalmologist, who examined her and discovered she had nterstitial keratitis, which had already involved one eye and was rapidly involving the other. That discovery led immediately to a study of the whole family (they went to a public clinic), it was found that the father, the mother, the older daughter, and the boy had syphilis. The subsequent history was this: The whole family went for treatment to a public clinic, because they were people of very small means; but the tragedy, as they felt it to be, which had fallen upon them seemed to bear very heavily, especially upon the father. Doubtless he felt himself responsible, for the man developed the symptoms of general paralysis, became violent, and had to be taken to a mental hospital, where he died three days after admission.

The girl who had interstitial keratitis persisted in treatment; in fact, the whole family went on with the treatment. In examining that girl a short time ago, I was amazed to see the splendid result achieved in her case. I also saw the remaining members of the family. The boy's condition, apparently, has cleared up quite well. The mother remained under treatment for a short time; then, because the husband was gone and the family was in desperate straits, she neglected her treatment and developed a gumma of the nose which caused a very unsightly scar upon her face. She felt as if she were wearing a badge that announced to all who saw her that she had syphilis. Not only that, but prospective employers turned her away because she wasn't a person whom they could employ to serve the public, so that the family got into really desperate economic straits.

Just to finish that bit of the story, we were able to arrange for further treatment of the mother and for a plastic operation which we believe will solve the economic problem as well as protect her future health. The girl has been cured, apparently, of her interstitial keratitis, but she has a congenital heart defect which may or may not be due to the poor nutrition and poor development which occurred before birth.

This is the really important point. The woman was pregnant twice. She was attended by a physician. She did not have a blood test at the time of either of her pregnancies. If she had had a blood

test, syphilis would undoubtedly have been discovered. If the syphilis had been discovered, it would have led in natural course to the discovery of syphilis in the husband, possibly preventing the later development of general paralysis of the insane. Almost certainly, syphilis would have been prevented in both children. That is the reason we are aiming in this joint campaign against congenital syphilis to have every pregnant woman examined early in pregnancy, and to have a routine serology as a part of that examination. If we do that we can prevent congenital syphilis in almost one hundred per cent of the cases. In addition, it gives us the natural lead to syphilis in the rest of the family. We are now realizing as never before that syphilis is a familial disease.

CHAIRMAN SNOW: In answer to a question, Dr. Rice expressed the opinion that a law requiring blood examinations of all pregnant women would do little good now; because, among other things, it is very doubtful whether any way could be devised for enforcing it. I think we are all interested in Dr. Marshall's comments on this and on other questions which have been raised. As most of you know, Dr. Marshall is a doctor of public health of England, as well as a physician and experienced health and welfare worker in this country.

DR. JESSIE MARSHALL (New York, N. Y.): I should like to support what Dr. Rice said about laws. I am no great believer in laws as a means of treating disease.

It would be excellent for every pregnant woman to have a Wassermann test, but it seems almost impossible: first, because of lack of hospital facilities and lack of money; second, because of the amount of ignorance and prejudice on the part of the public and expectant mothers themselves. It is especially pertinent to bring up this question at this meeting, where there are so many nurses, social workers and public health workers, who are the ones, very often, to come in contact with the women even before they are pregnant. If nurses and social workers are able to explain in simple language the causes and effects of syphilis, they have the opportunity of stressing the great importance of seeking medical advice at the earliest possible stage in pregnancy. We cannot bring people in for treatment by force; they have to come willingly.

Only by getting them to understand the importance of prenatal care can we get our patients to come before the fifth month, as they do at present. As a matter of fact, Dr. Rice showed that a good percentage of patients come before the fifth month. In my experience in England, the women came in at the last possible moment. They waited until they were in labor before they sent for the doctor. In New York, while there is a great way for us to go, at any rate we can get thirty per cent of the women into the clinics to seek medical advice before the middle of their pregnancy.

Some of the prejudice on the part of physicians and patients against a routine Wassermann test is that at the present time, with the usual technique, it calls for the collection of 5 cc. of blood. It is very encouraging, therefore, to find that Widener, of the British Ministry of Health, recently showed how the Wassermann and the flocculation test for syphilis can be carried out on a very small amount of blood. He can get results with .15 cc. of serum. I hope that laboratory workers in this country will find it advisable to develop his technique.

In considering the problem of routine blood tests, it must not be forgotten that, so far as physicians in private practice are concerned, many are working under great pressure and receiving little monetary return. I had a little experience assisting a physician who was receiving frightfully small fees. To make a living, he had to rush his patients through. It could not be expected that he should take a routine blood test with his limited equipment and fees.

The question also arises in my mind whether there may be some relationship between maternal mortality and syphilis, and whether the routine Wassermann test, followed by proper treatment, might not reduce the present rate. In this connection, it occurs to me that studies might be made of women bringing children to hospitals and clinics—women who are apparently healthy. I was interested in some figures from Aberdeen, Scotland, which showed that seventy-five per cent of the mothers coming to an ordinary children's clinic, as healthy individuals, were discovered to have severe degrees of anemia. It would be helpful if we could discover also how much latent syphilis there is in a group of this type. If it is possible to secure the co-operation of these women in determining

their anemia, it might be possible to give them a blood test at the same time, since they are already in a receptive state of mind and are willing to have any tests made.

I appreciate Dr. Klauder's sympathetic attitude toward the syphilitic person. Up until a few years ago it would have been difficult to get over to the public the fact that anyone who has syphilis is a sick person who needs treatment. It is only in the past several decades that hospitals have taken cases of syphilis. An enormous amount of prejudice still exists, with the consequent difficulty of getting money for the treatment of venereal diseases.

As a final word, I can only repeat that the problem of anti-syphilitic treatment in pregnancy is twofold: first, education of the public, especially prospective parents, as to the need of a routine Wassermann test as a part of prenatal care; and, second, the development on the part of the medical profession of techniques by which testing and treatment may be simplified as much as possible.

CHAIRMAN SNOW: Dr. Goldberg, you have had many experiences with law enforcement.

DR. JACOB A. GOLDBERG (New York Tuberculosis and Health Association): I can tell you that a law won't do any good. In our study in twenty-eight hospitals, we found the great majority of the women got only one injection. Many of the doctors felt that was all they needed. The women never came back. It was known right along they had syphilis. The husbands weren't brought in in half of the cases. What good would a law do? We can't depend on the private hospitals because they are not in a position to help; they have to turn a great many patients away. In one hospital, eighty-five per cent of the patients in the syphilis clinic are treated free of charge. What good would a law do in the family Dr. Clarke tells about, with four people in the hospital, each requiring one treatment a week at $3 "a shot"? The thing to do is to increase the budget of the Health Department to meet the needs.

CHAIRMAN SNOW: Mr. Carris, what other questions should we include in our discussion?

MR. LEWIS H. CARRIS (National Society for the Prevention of Blindness): I do not know what the experience of other agencies

has been, but we have had several examples of the unwillingness of the press and radio officials to mention syphilis, as such. Most of you, I know, have either read or heard of Dr. Parran's recent experience with a national network, and the fact that he was refused a voice on the air because he wished to discuss syphilis and the importance of public education on this subject. At the time, a New York newspaper, commenting editorially, condemned the radio executives for their action. Only a few days later, however, the same paper edited out the subject "syphilis" in recording the interview of a special feature writer with a member of our staff. When these two powerful means of public education do not accept the subject for mention, let alone discussion, we realize how far from enlightened the general public must be on this subject.

DR. RICE: The broadcasting companies have been very much concerned about this problem and I think we shall be able to arrange a conference to discuss it. After all, the newspapers publish and the stations broadcast those features that the public wants. Up to the present time, apparently, it is their feeling that the public does not want any discussion of venereal diseases. Undoubtedly, they must have had some expression of public sentiment against it. However, there will be opportunities for planning with the radio officials procedures which may be useful for the future.

MR. THEODORE O. YODER (National Society for the Prevention of Blindness): I believe that an experience I had as financial secretary may be of interest. It seemed to me that the necessity for prenatal care would make a worth-while appeal, and, with the help of Dr. Snow and other members of our Board of Directors, a letter was prepared setting forth the whole idea of prevention of prenatal syphilis. Over 2,500 letters were sent out and we have not had a single expression of disapproval or criticism; in fact, many sent in contributions, showing that they felt this work must be promoted.

CHAIRMAN SNOW: Dr. Exner, we should appreciate your comments on any of these questions.

DR. MAX J. EXNER (American Social Hygiene Association): From the point of view of prevention, congenital syphilis is the most hopeful form of the disease. As to cure, it is considerably

more resistant to treatment and less successfully treated than acquired syphilis. The prevention of congenital syphilis resolves itself into two main steps: securing a blood test in the early examination of every pregnant woman; and immediately instituting treatment in those infected.

Because of the excellent results obtained from the law in regard to ophthalmia neonatorum, we might wish it were feasible to have a compulsory blood test for every pregnant woman.

Congenital syphilis must be attacked along these two lines: First, the persistent education and persuasion of the medical profession that a blood test should be included in the examination of every pregnant woman; and, second, because of the fear of the general medical practitioner of offending the patient, the persistent education of the general public so that no pregnant woman in any walk of society will resent the taking of a blood test, but will welcome it and, indeed, insist upon it for her own protection.

CHAIRMAN SNOW: When President Roosevelt was governor of this State, he appointed a commission to review the program of the state and decide what were the next steps to be taken in perfecting the public health service. The commission reported, among other things, that syphilis was the next great disease which should be brought under control. Dr. Pfeiffer will, I am sure, be glad to say just a word to us, as the director of the Division of Social Hygiene of New York State.

DR. ALBERT PFEIFFER: Why haven't we eliminated impaired vision and blindness from communicable diseases altogether, or why haven't we reached nearer that goal? Possibly, a few examples may bring these reasons before us.

A week ago, I was called in to see a youngster in a hospital, a little girl six years of age, totally blind in the right eye. It was with considerable difficulty that the welfare commissioner and the health officer of the county were able to get that youngster into a hospital, because the trustees still held to the old idea that there must be something radically wrong with anyone having that affliction.

The day before yesterday, a health officer sent in regulations to be approved by the State Commissioner of Health, designating the

county jail as the place to isolate a person with syphilis. There is a physician who designates a jail as the place for a patient sick with syphilis. We have to change public opinion—the point of view of physicians, lawyers, well-meaning bankers, citizens in the community, everybody—a slow, educational process.

Some progress has been made. In the past month, thirty more clinic periods were established in New York State. This month we expect thirty more, with the aid of TERA funds and other funds. Last week, we established a special clinic in Poughkeepsie just for the care of children and prospective mothers, which has already handled twenty-five cases.

With blood tests becoming routine, there is chance for improvement as there is in every phase of medicine and public health. In up-state laboratories, from nine and ten thousand the first year the laboratories were in existence, six hundred and fifty-odd thousand blood tests are being performed. Blood tests are being taken in state institutions and hospitals generally all over the country and in all the various clinics.

CHAIRMAN SNOW: Dr. Edward L. Keyes was expected to participate in this meeting, but his physician would not let him come. Physicians do get ill, once in a while. He is the president of the American Social Hygiene Association. He was the chairman of its first Executive Committee, one of the charter members of its Board of Directors. He served as a pioneer in that movement, with Dr. Jackson, who is here with us as our guide, philosopher and friend in all our meetings today. I think one way of getting Dr. Jackson to say a word to us is to ask him if he won't represent the American Social Hygiene Association in this session.

DR. JACKSON (Denver, Colo.): I feel that the only way I could hope to represent Dr. Keyes would be in the matter of length of experience and observation of how things change, when seen in a long perspective. Those of us who have been here this afternoon and have felt it a highly educational opportunity should not underrate the importance or the slow progress of education. It is real progress. We must remember that here this afternoon, as every day, the past meets the future. The new knowledge must over-

come old barriers, and old barriers are very difficult to remove. The lesson, above all, that has come to me this afternoon is that we are going forward and that, looking forward, we see a lot of new opportunities of which no other generation has ever dreamed. Among these, is the growing public consciousness that syphilis is actually a disease that must be treated medically. If we can entirely eliminate the old attitude and substitute the knowledge that syphilis is a public health problem, we shall make more rapid, permanent progress.

CHAIRMAN SNOW: We have come to the end of the two hours allotted to this discussion. I think that we should adjourn upon Dr. Jackson's high note of prophecy.

Editorial

Colman Ward Cutler: 1862–1935

A GENTLEMAN of the old school was Dr. Colman Ward Cutler, courteous to all, gracious, and appreciative of even the smallest acts of kindness. So modest was he regarding his achievements, one could learn only from others that he stood at the head of his chosen profession of ophthalmology. He was generous, beyond words, of his skill, his time and his energies. He gave unstintingly to those who had little to offer but gratitude.

Perhaps the word that best expresses his personality is "courageous." He founded his opinions carefully, thoughtfully and scientifically, and defended them with indomitable courage. It was this very courageousness that made him so sympathetic to the opinions of others, even when such opinions were in opposition to his own. It was this very courageousness that was so disarming in its effects that children found him gentle and tender in his ministrations, making it possible for him to exorcise their fears and win their confidence and co-operation. It was this courageousness that gave his patients such confidence in his judgment and induced such willingness to follow his advice.

Dr. Cutler served the National Society for the Prevention of Blindness with great devotion as a member of its Board of Directors and, during the past two years, as its Special Consultant. In every letter that he wrote, there was something of his own personality; even when he could give no hope he imparted something of his own courage to aid the sufferer to face life.

In the same spirit of devotion, the members of the Board of Directors of the National Society for the Prevention of Blindness and the Editors of the REVIEW pay tribute to one who, both physically and spiritually, opened the eyes of the blind.

Note and Comment

Baltimore Makes Record.—Public health team work has been so perfected in the city of Baltimore that since 1929 no Baltimore baby has become blind because of birth infection. Any report of sore eyes in a newborn baby brings the same response from the health authorities in Baltimore that a three-alarm fire signal brings in the fire house. Although about 500 cases of babies' sore eyes come to the attention of the Department of Health each year, of which seven to ten per cent are gonorrheal in origin, the co-operation between hospital, physicians, public health nurses and health authorities has ably demonstrated that blindness from this cause is preventable.

Summer Training Courses for Sight-Saving Class Teachers.—Courses for the training of teachers and supervisors of sight-saving classes will be offered at the 1935 summer sessions of the following colleges and universities: Western Reserve University, Cleveland, Ohio, from June 24 to August 2; State Teachers College, Buffalo, New York, from July 2 to August 9; Teachers College, Columbia University, New York, from July 8 to August 16. Details regarding the courses may be obtained from the university or college offering the course, or from the National Society for the Prevention of Blindness.

Campaigning for the Reduction of Prenatal Syphilis.—The importance which social, medical and legal groups attach to the social hygiene problem was shown in the interested response of many groups to the recent Regional Conference on Social Hygiene, called under the auspices of the New York Tuberculosis and Health Association in New York City. From the point of view of social work, education, medicine and public health, as well as of domestic relations, the problem of reduction of prenatal syphilis claimed attention.

"There is no subject that requires greater attention than a disease like congenital syphilis, which is a tragedy of motherhood and a destroyer of children. The continued death of babies from con-

genital syphilis is inexcusable because it is preventable. . . . Our aims are: (1) to urge all expectant mothers to seek medical care at the beginning of pregnancy; (2) to stress the need of the Wassermann test early in pregnancy; and (3) to arouse on the part of the public a wider understanding of the dangers of congenital syphilis," said New York's Health Commissioner John L. Rice, in a recent message to health and welfare agencies, in inaugurating a co-operative educational effort against congenital syphilis. Participants in the campaign are the Department of Health, the Co-ordinating Council of the Five County Medical Societies of New York City, the Committee on Social Hygiene of the New York Tuberculosis and Health Association, the health and welfare agencies represented in the Health Education of the Welfare Council, and other affiliated groups.

Health in New Mexico.—In order to define more definitely than heretofore the important public health problems of the state of New Mexico, the New Mexico Tuberculosis Association organized a state-wide health survey, in which the National Tuberculosis Association, the American Social Hygiene Association, the United States Public Health Service, the Office of Indian Affairs, the National Society for the Prevention of Blindness, the American Red Cross and the American Public Health Association participated. For the conservation of vision a survey was made in key counties, first, to determine what was being done to save the sight of children, and, second, to render assistance to public health nurses and municipal and county superintendents of schools in enlarging the phases of their health and educational programs that pertained to sight conservation. A full report of the undertaking has recently been made in *Health Survey of the State of New Mexico*, published by authority of the New Mexico State Planning Board.

Greater New York Safety Conference.—For the sixth time the Metropolitan Chapter of American Society of Safety Engineers called a conference in New York City, in which the co-operation of safety, health, and industrial groups was fully utilized. Of special interest at this year's meeting was the conference on Child Education in Safety. The National Society devoted most of its exhibit

space to a display featuring the hazards of fireworks and other forms of Fourth of July celebration, as well as eye hazards in child play.

Lighting Conference Emphasizes Better Light—Better Sight.—At a meeting of lighting experts called by the National Better Light—Better Sight Bureau in New York City, many phases of lighting and its essential partner, seeing, were discussed. Of special interest were papers on the "Social Significance of Better Sight," given by James Edward Ives, senior physicist of the United States Public Health Service; "The Importance of Good Sight for Human Safety," by R. E. Simpson; and "A Magazine Editor's Impressions," by Mrs. Clara Savage Littledale, editor of *Parents*. A visaphone presentation of "The House of Vision" demonstrated the physiology and mechanism of sight in a style suitable for school children and lay audiences.

Miniature Industrial Posters Available.—"Goggles"; "Don't Trust Your Eyesight to Your Neighbor!" "He Took a Chance," envelope-sized reproductions of the Society's industrial posters, are available in sets of 100 each, upon request to the National Society's headquarters, 50 West 50th Street, New York, N. Y.

Conserving the Sight of School Children.—Approximately 3,000,000 school children in the United States are handicapped in their education by defective eyesight. For the benefit of these children, and to prevent their ranks from increasing, the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, in co-operation with the National Society for the Prevention of Blindness, has issued a third edition, revised and brought up-to-date, of *Conserving the Sight of School Children*. "The importance of good eyesight among school children cannot be overestimated," says the report. "We have come to recognize that defective vision or disease in the eyes of the child not only may have detrimental influence on his school progress, but may react upon his general health and upon his adjustment to his school, his playmates, and even to his family. This recognition has given new impetus to the

work of discovering and correcting visual defects among children, beginning with the preschool age."

The report is available at cost, 35 cents, from the National Society for the Prevention of Blindness; the National Education Association, 1201 Sixteenth Street, N. W., Washington, D. C.; or the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Safety Glass for New York Buses.—As the result of a bus disaster in Ossining, New York, during the past summer, the Public Service Commission of New York has issued new regulations for the safety of passengers on buses operating in the state. After January 1, 1935, all buses must have safety glass in the windshield and in the window at the driver's left hand. After January 1, 1936, all the glass throughout the bus must be of safety-construction, and must be so marked. This will eliminate the possibilities of flying glass, with its disfiguring and often disabling results, in the event of an accident. This ruling, and the regulations for safety glass in other classifications of motor vehicles, apply only to cars made after the specified dates, and are not retroactive on cars manufactured before those dates.

National Society Notes.—Dr. Park Lewis, vice-president of the Society, talked over a wide network of radio stations on "The Prevention of Blindness," under the auspices of the radio bureau of the New York Academy of Medicine. Hundreds of letters and many requests for the Society's material have been received as a result of the talk.

In visits to seven southern states, Mr. Lewis H. Carris, managing director, assisted local groups and committees to formulate and to develop prevention of blindness activities. In Louisiana, Mr. Carris was a speaker at the annual meeting of the Louisiana Society for the Prevention of Blindness, and participated in the widespread programs on sight conservation given before local organizations; in particular, the New Orleans Kiwanis Club, the Orleans Club, the Rotary Club, the Co-operative Club, and the Young Men's Business Club. After a conference with ophthalmologists in Alabama, he assisted in drafting a bill to be submitted to the legislature to provide the Alabama State Institute for the

Deaf and Blind and the State Medical Association of Alabama with funds to improve the sight and hearing of pupils in the Institute. In Florida, he conferred with ophthalmologists on projects connected with prevention of blindness work. He also visited Georgia, North Carolina, Virginia, Maryland and Mississippi.

Mrs. Winifred Hathaway, associate director, talked to a New York University course in child hygiene on sight conservation, and was a guest speaker at a meeting of the Stamford, Connecticut, Lions Club. She attended the annual conference of the International Council of Exceptional Children and the 65th annual convention of the National Education Association. Dr. Anette M. Phelan also attended the convention as a member of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

The Section on Ophthalmology of the New York Academy of Medicine devoted a meeting to discussion of the ophthalmologist and the prevention of blindness, the care of the blind, and sight-saving classes. Dr. Park Lewis, Mr. Edward H. Van Cleve, principal of the New York Institute for the Education of the Blind, Dr. Conrad Berens, and Mrs. Winifred Hathaway were contributors to the forum.

As director of nursing activities, Miss Mary Emma Smith, R.N., talked to a meeting of nurses under the auspices of the Newark, New Jersey, City Department of Education; she gave a vision testing demonstration to members of the Kindergarten Association in Stamford, Connecticut. "Saving Children's Eyes," was the title of a talk Miss Smith gave over a New York radio station.

Current Articles of Interest

A New Theory of Binocular Vision, F. H. Verhoeff, M.D., *Archives of Ophthalmology*, February, 1935, published monthly by the American Medical Association, Chicago, Ill. Corresponding retinal units are represented separately somewhere in the brain, but each of every pair is represented in consciousness by the same single unit, says the author. For the seeing of two corresponding images as one, the term "unification" is suggested. The terms "fusion" and "suppression," as applied to vision, are misnomers and should be abandoned. The writer concludes that, since somewhere in the brain corresponding retinal images must be represented separately, and there is good reason to believe that in the occipital lobes they are so represented, it seems possible that in this region is chiefly situated the sensory nervous mechanism for stereoscopic perception of depth.

The Result of Orthoptic Treatment in Divergent Squint, Sheila Mayou, *British Journal of Ophthalmology*, January, 1935, published monthly by the British Journal of Ophthalmology, Ltd., London, England. In a series of cases, aged from 4 to 12 years, in which orthoptic treatment was given in conjunction with other types of treatment, it was found: 1. Cases of divergent strabismus benefit from orthoptic treatment, whether they can be cured by treatment alone or whether they will need an operation; 2. The majority of cases seen are cured by orthoptic treatment alone, without operation; 3. The percentage of emmetropic cases is very high and the majority of them come under the heading of periodic or occasional divergent strabismus; 4. There are very few divergent squints associated with amblyopia. The writer amplifies her conclusions with case records.

Social Service in Ophthalmology, Eleanor P. Brown and Lawrence T. Post, M.D., *American Journal of Ophthalmology*, February, 1935, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Without follow-up of patients, many eye conditions cannot be brought to a satisfactory ending. The social service

worker in an eye clinic is of special value to the ophthalmologist and to the patient in bringing about continuity of treatment; the authors urge ophthalmologists to awaken to the advantages to be gained through utilizing social service.

The Prognosis in Spontaneous and Traumatic Detachment of the Retina, Charles Goulden, F.R.C.S., *Lancet*, October 6, 1934, published weekly by the Lancet, Ltd., London, England. Describing the methods of treating retinal detachment, the author concludes: "It does not seem likely that we shall achieve a much higher percentage of successes in the direction of replacement of the retina . . . but we may hope for better result in the direction of preserving central vision; this will depend almost entirely upon the early recognition of defects in the retina so that an operation may be performed before the retina has become extensively detached and, more especially, before the macula has become involved."

Primary Glaucoma, G. Herbert Burnham, F.R.C.S., *British Journal of Ophthalmology*, December, 1934, published monthly by the British Journal of Ophthalmology, Ltd., London, England. Outlining the respective values of the different forms of treatment of this disease, the writer concludes: ". . . . . that internal medicinal treatment, as advocated in this article, is superior in many ways to, and more to be relied upon, than the usual modes of treatment of this disease."

Industrial and School Lighting, Henry B. Dates, *Transactions of the Illuminating Engineering Society*, December, 1934, published monthly by the Illuminating Engineering Society, New York, N. Y. A summary of the results of some of the more important work completed during the past year by the Committee on Industrial and School Lighting. Investigations to determine the relation between light and safety as they pertain to schools and industrial plants are reported, and a cross-section of the promotional and engineering status of industrial lighting conditions throughout the United States is presented. A survey of lighting conditions in sight-saving classrooms is also described, and data are given on the influence of various levels of illumination as they affect the interest,

attention and well-being of both students and teachers. A section also describes general classroom lighting in schools and in dormitory and study rooms in universities.

Practical Details in the Orthoptic Treatment of Strabismus, George P. Guibor, M.D., *Archives of Ophthalmology*, December, 1934, published monthly by the American Medical Association, Chicago, Ill. Describing the technique of orthoptic treatment for squint, the author demonstrates that, while in usual squint treatment—refraction and occlusion of the fixing eye—a period of treatment of twelve months shows improvement in 25 per cent of the cases, with orthoptic training the improvement is reached by 50 per cent of the cases at the end of six months. This technique not only brings about improvement in twice as many cases as do older methods, but, in half the time, demonstrates to the ophthalmologist and the parents the feasibility of continuing treatment or resorting to operation. During the discussion of the paper, it was pointed out that the ophthalmologist had little time to devote to the arduous task of giving treatments and that the training of lay technicians to work under ophthalmological supervision was of special significance at this time.

The Effect of Diet and Vitamins on Trachoma, C. E. Rice, M.D., Robert Sory, M.D., J. E. Smith, M.D., P. E. Faed, M.D., and A. A. Drake, M.D., *American Journal of Ophthalmology*, August, 1934, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Thirty patients with trachoma were studied for varying periods to determine the effect of diet and vitamins on the course of the disease. There was no evidence that a balanced diet supplemented by cod-liver oil and brewer's yeast affected the course of the disease.

Ophthalmological Symptoms and Complications of the Common Acute Infectious Diseases of Children, C. Dwight Townes, M.D., *Kentucky Medical Journal*, October, 1934, published monthly by the Kentucky State Medical Association, Bowling Green, Ky. Concise outline of the eye signs in childhood diseases, the prophylactic care of the eyes during the severe stages of the disease, and possible sequelae. Measles, scarlet fever, influenza, diphtheria, whooping cough and mumps are discussed.

The Efficiency of Orthoptic Training in Strabismus, J. L. Bressler, M.D., and Katherine H. Chapman, M.D., *Illinois Medical Journal*, September, 1934, published monthly by the Medical Profession of Illinois, Oak Park, Ill. Outlining the methods of treating and correcting squint, the authors conclude that the necessity for surgery in squint patients will be greatly reduced if orthoptic treatment is carefully carried out. When surgery becomes necessary or has been performed, the final results will be much better with orthoptic training than with surgery alone. The authors have found that treatment of amblyopia before surgery will assure better results.

Rôle of the Gonococcus in Purulent Ophthalmia in Warm Climates, A. F. MacCallan, M.D., *Archives of Ophthalmology*, December, 1934, published monthly by the American Medical Association, Chicago, Ill. The writer has found that while trachoma predisposes the eyes to gonococcic conjunctivitis during the hot weather, the presence of pannus affords some protection to the cornea against ulceration. It is found that there is a marked atmospheric influence on the occurrence of gonococcic conjunctivitis, since the number of cases and the percentage of its incidence rise with the spring rise in temperature. The incidence of blindness from gonococcic ophthalmia increases with age, either because of complications of cataract and glaucoma, or because of recurring ulceration which impairs and destroys vision.

The Relation of Glaucoma to Blood Pressure, Paul Weinstein, M.D., *Archives of Ophthalmology*, February, 1935, published monthly by the American Medical Association, Chicago, Ill. It is found that arteriosclerosis and glaucoma, both met with more frequently in the male than in the female, have a definite relationship. The writer says that it is possible that a nutritional disturbance, caused by a pre-arteriosclerotic condition, might explain the development of glaucoma simplex.

Summary of Refractive Conditions and Causes of Blindness in Mississippi, A. G. Wilde, M.D., *New Orleans Medical and Surgical Journal*, November, 1934, published monthly by the Louisiana State Medical Society, New Orleans, La. Reviewing 272 cases of

blindness in his own patients, the author finds that more than twice as many men are listed as women, probably because the element of industrial eye hazard is more frequent among men than women; traumatic blindness was found in 91 cases. Glaucoma was the second greatest cause of blindness, causing more than 15 per cent of blindness. From the study, it was found that a little less than half the cases were hopeless from the start; 36 per cent could probably have been helped at one time; and 14 per cent of those now blind may possibly have vision restored. Of 3,000 cases of refractive errors, myopia was found in a small portion; hyperopia accounted for 25 per cent of the total, and compound hyperopic astigmatism brought 45.7 per cent of the cases for ophthalmological care.

Eye Injuries and Their Treatment, Paul G. Moore, M.D., *National Safety News*, November, 1934, published monthly by the National Safety Council, Chicago, Ill. While it is the safety organization's concern to prevent eye accidents from occurring, the eye physician is interested in the preservation of vision after the accident has occurred and in preventing subsequent complications that imperil the sight. The author advises that all particles lodged in the eye be removed by an eye physician or by a trained nurse who is working under the supervision of an eye physician, for the ultimate preservation of sight. Reviewing cases, he finds that eye accidents occur not only in those occupations commonly considered hazardous to the eyes, but also in widely diversified tasks and fields.